

**THE DEPICTIONS OF ENVIRONMENTAL ISSUES IN
MACDONALD'S *FINITUDE* (AN ECOCRITICAL STUDY)**

A THESIS

Presented as Partial Fulfillment of the Requirements for the Attainment of the

Sarjana Sastra Degree in English Language and Literature



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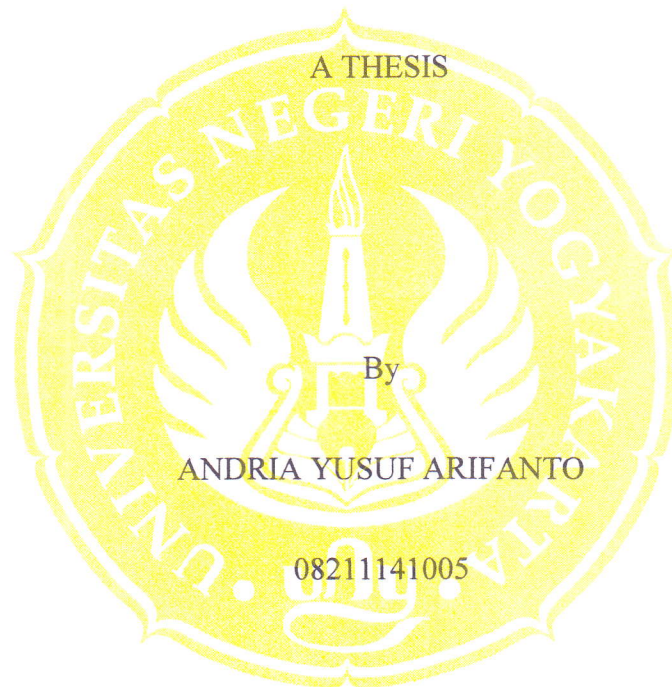
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The Depictions of Environmental Issues in MacDonald's *Finitude*

(an Ecocritical Study)



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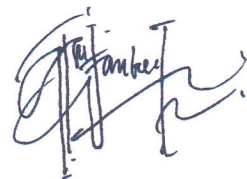
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Yogyakarta, 18 Juli 2013



Andria Yusuf Arifanto

MOTTOS

Science cannot solve the ultimate mystery of nature.

And that is because, in the last analysis, we ourselves are the part of nature

And therefore part of the mystery that we are trying to solve. (Max Planck)

When a man learns to love,

he must bear the risk of hatred. (Uzumaki Nagato)

Just because I don't care doesn't mean I don't understand. (Homer Simpson)

In this life we cannot always do great things,

But we can do small things with great love. (Mother Theresa)

Everything will be okay in the end

If it's not okay,

Then it's not the end. (Ed Sheeran)

DEDICATIONS

This precious effort is dedicated to:

- ❖ Alloh *SWT*, may You will always shine my way to reach You
- ❖ My beloved *Papa, Mama, Mbak, Mas, and Adek*
- ❖ Someone who brings me an abundance of joy

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Finally, I realize that this thesis is far from perfection. Any constructive suggestions, comments or even criticism are accepted gratefully for the betterment of my thesis. I also have a great expectation that my thesis can be beneficial for literature learning process.

Yogyakarta, 18 July 2013



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ABSTRACT

The objectives of this research are to identify the environmental issues existing in *Finitude* and to explain the ways environmental issues are depicted in the novel. The researcher applies Glotfelty's Ecocriticism theory, Archer's Understanding the Forecast theory, and Stanford's Literary Elements theory.

This research is a descriptive-qualitative in nature and a content analysis method is used to analyze the data. The subject of this research is a novel entitled *Finitude* written by Hamish MacDonald. The data were some phrases, clauses, sentences, and discourses related to the environmental issues existing in the novel. The key instrument of this research is the researcher himself, by making indicators of the environmental issues and literary elements as explained in the analytical construct. The data of this research are obtained through an employment of the theories in the table's indicators. In order to obtain the trustworthiness of the data, the researcher uses *peer debriefing* method.

This research shows that there are three environmental issues existing in *Finitude*: the greenhouse effects, the carbon cycle, and the forecast. There are three issues of the greenhouse effects: blackbody radiation, the greenhouse gases, and heat and wind. Next, there are two phenomena in the carbon cycle: carbon on Earth, and fossil fuels and energy. Furthermore, there are two phenomena in the forecast namely: weather versus climate and forecasting climate change. Those environmental issues are depicted in *Finitude* through two prominent literary elements: characters and point of views. The characters' traits are revealed by action and by speech. The character's speech gives more power to inform a certain natural phenomenon. Then, the character's action can articulate and show clearly about environmental issues existing in *Finitude*. Moreover, the point of views used in the novel are participant point of view and non-participant point of view. The participant point of view focuses on a single character's view towards the natural phenomena. On the other hand, non-participant point of view can report both of external and internal conditions of the natural phenomena in the story. As a result, this research concludes that *Finitude* offers encouraging messages towards environment's preservation.

Keywords: ecocriticism, environmental issues, and literary elements

CHAPTER I

INTRODUCTION

A. The Background of the Study

A variety of environmental problems now affect this entire world. As globalization continues and the earth's natural processes transform local problems into international issues, few societies are being left untouched by major environmental problems. At the same time, an environmental problem arises whenever there is a change in the quality or quantity of any environmental factors. This directly or indirectly affects the health of man in an adverse manner.

Environmental issues gained increasing prominence in the latter half of the 20th century (Maslin, 2005). Until today, global population growth has lead to increasing pressure on worldwide natural resources including air and water, arable land, and raw materials, and modern societies have generated an increasing demand for the use of industrial chemicals. The use of these chemicals has resulted in great benefits in raising the standard of living, prolonging human life and improving the environment. Otherwise, as new chemicals are introduced into the marketplace and existing chemicals continue to be used, the impacts of these chemicals on the environment and human health have become a concern. Next, the development of industry also threats nature obviously and nature is shifted by industry. Industry sectors can give benefits to people's life, but how people can live peacefully is still doubted. Many industrial companies, slowly but surely, start to shift the position of green areas. In contrast, the fact shows that green areas

play important roles to make the world stable. Green areas are threatened by human immoral attitudes. Humans deal with many damages in this world and almost all of the bad impacts are the result of humans' behaviour. They do negative actions such as, illegal logging, opening of land illegally, and many others. The lack of green areas brings worst impacts to this world.

Slowly but surely, at the beginning of 1880, the issue of global warming seemed to reach the most obstinate ignorance (Spencer, 2008). The main cause was the gas emission which was usually produced by vehicles and industrial pipes. This gas emission threatened the earth slowly and made the atmosphere of the earth increasingly thinner from time to time.

Moreover, this earth is getting warmer and warmer, from north pole to south pole, and everywhere in between. The effects of rising temperature can be felt everywhere and they are happening right now. Signs appear all over the world, and some of them show bad improvement. They are also shifting precipitation patterns and animals to the extinction. According to the data of National Geographic in 2007, ice is melting worldwide, especially at the Earth's poles (Than, 2012). These phenomena include mountain glaciers, ice sheets covering West Antarctica, Greenland, and Arctic sea ice. Sea level rise has become higher over the last century, while hurricane and storm happen continuously. Unfortunately, other effects could happen later in this century if the global warming continues. Flood and drought will become more common, less fresh water will be available, and some diseases will spread easily. Then, these problems can be predicted that other

living things are threatened as well, or, in other words, plants and animals will be the first victims before human.

Humans and nature are both living things and these two elements construct the world. Each element has its own function and relationship which cannot be separated. The reason is that when it is separated, it will make imbalance in this world. The world is very important for all living things and people must be responsible for protecting this world. However, as people can see, their environment is getting worse from time to time. This case indeed exists because of humans' attitudes which can be seen through what they do to their environment. Many disasters in this recent year have increased as informed by Michael (2004) that the record of increasing warmth of whatever year is caused by El Nino. He also explained that the current recordholder for surface temperature announced in 1998 was El Nino, one of the two or three biggest extreme disaster in the last 100 years.

Humans as the main cause must be aware of this crucial case because they are one part of this world. They must give beneficial contributions to this world, but unfortunately they are making the world worse from time to time. The fact shows that the main problem of this negative attitude is their way of thinking. Humans incline to be egoistic, careless about others, and busy with their own business. In addition, they merely think of themselves without looking at their surroundings because they think that every single problem can be solved by themselves. Then, they put their life on the top priority while thinking that others, is the last priority. This way of thinking leads people to the very bad life which brings them to the

negative attitudes and makes the world suffering. According to NASA, all three major global surface temperature reconstructions show that the Earth has warmed since 1880. Most of this warming has occurred since the 1970s, with the 20 warmest years having occurred since 1981 and with all 10 of the warmest years occurring in the past 12 years. Even though the 2000s witnessed a solar output decline resulting in an unusually deep solar minimum in 2007-2009, surface temperatures continue to increase (Peterson, 2009). The main cause of the problem is carbon dioxide emissions and unfortunately, humans give a great contribution to the increase of carbon dioxide emissions. The main sources of these emissions are electricity, transportation, and industry and these can prove that people do not think of their surroundings which they live in. Otherwise, the place where they live in has given them everything needed.

Indeed, people can say that they have given many, even, much to their place or environment, but they are also greedy of having what their environment has. Of course, they can get many things from this earth as long as they know their capacity. However, that is just an irony because humans never know their capacity, how to maintain what they want, and even, they are worse than animals in taking care of their environment. These can be seen from the nature where animals live because animals respect nature very much. For example, they are very protective to their land, so when there are strangers, then they will be ready to protect their land. This is extremely contradictory to the people who do not want to save their land or environment because they exploit and take every single part of it without giving something to the nature back. As people can see the cause

of global warming is the greenhouse effects and other disasters resulted from humans' negative activities such as illegal logging which can increase the concentration of carbon dioxide. For that reason, removing carbon dioxide in the air can be done by maintaining trees or expanding the number of plants.

Unfortunately, humans have less awareness of forest preservation as the United Nations Environment Program in the 2007 report estimating that 73-88% of timber logged in Indonesia is illegally sourced (Schmidt, 2010). The datum shows that the destruction of forests due to illegal logging gradually increases, which can give negative effects on the humans' environment, especially in Indonesia. For that reason, the question whether carbon can be removed in the air is still doubted because humans' greed is very dominant over nature. Humans still ignore nature and the way they behave make this world suffering. Indeed, humans know that this world is suffering, but they do not care about that. They think that it is a duty of the government although they should remember that they are also parts of the government. They become the government for their life in the case of nature's preservation because their life is their nature and without nature there will not be life anymore. This is also supported by Rev John Owen, the leader of the Presbyterian Church of Wales. In *Independent* electronic news (2007), he said that the international agreement on climate change in Bali did not mean that people should rely on governments to save the world. However, it is better if people redouble their efforts to act and campaign against climate changes.

People understand that this environmental case seems to reach the most obstinate ignorance. Therefore, many criticism have been delivered by some

individuals or communities to this crucial issue. Dealing with the criticism, there are many ways that people can do in giving responses. They can do demonstration to criticize environmental problems or also hold a kind of seminar or conference which discusses this issue. Moreover, creative and intellectual people may use a special way and the special way, here, means that they make movement through texts. For example, they can use literature because it is considered as the most effective way to criticize this issue. Not only does it talk about values or how to behave, but it also covers many aspects of life such as, ideology, environment, culture, social problems, and also some conflicts. This argument is in line with the statement given by Eagleton (1995:15) quoted as follows:

I do not mean by 'ideology' simply the deeply entrenched, often unconscious beliefs which people hold; I mean more particularly those modes of feeling, valuing, perceiving, and believing which have some kind of relation to the maintenance and reproduction of social power. The fact that such beliefs are by no means merely private quirks may be illustrated by a literary example.

Therefore, literature plays important roles in constructing ideology because literature has many functions for people's life. It gives a magnificent sign for people to take care of others and its scope is worldwide. Every single part of this world can be touched by literature due to the fact that literature shares many problems of people and nature where they live in. Furthermore, every problem is discussed in details in literature and this problem can make people understand others and their surroundings. People will know what they should do and how a problem can happen. Finally, they will understand many things whether it is good or bad.

Those reasons make literature become the most influential media because it can be prestigious for people's life. In the case of environmental issues, literature can be guidance for people to take care of their surroundings and remind people that they do not live alone. They live with nature, so they have to preserve what nature has. Literature can also be a way for sharing bad effects which are brought by humans' attitudes toward nature. That is why literature is the most magnificent way to change humans' attitude and ideology.

Talking about literature, there are many kinds of literary works in this era. They can be poetry, prose, short story, song lyrics, film, novel, etc. What the researcher wants to emphasize is novel. Stanford (2006) states that novel is the copy of humans' life which contains many experiences through certain settings and is presented in the form of time sequences.

In response to this case, novel as one of literary works can play its roles to people's life. People can understand many problems through literature and it is the same as what novel gives. Specifically, in the case of environmental issue, novel can be media for sharing about what kinds of environmental issues that are happening recently and how they can happen. In short, novel can be the foundation of human's ideology. This such novel can be a scaffolding for changing humans' attitudes because novel can make people better as well as giving information to the people. Eagleton (1995:3) adds, "The literary work was neither a vehicle for ideas, a reflection of social reality nor the incarnation of some transcendental truth: it was a material fact, whose functioning could be analyzed rather as one could examine a machine". Therefore, through a reflection of social

reality, people can get information about environmental issues which now affect the earth. Moreover, they will also understand how dangerous the effects are because they are influenced by the inspiring novel. For that reason, people will change and do something to prevent the worst effects which follow.

Finitude is a novel which was written by Hamish MacDonald and was firstly published in 2010. It is published both in online and printed form. *Finitude* is a novel which presents a crucial issue about the Earth. Indeed, this novel belongs to the science fiction genre. However, the way the author presents the story is rarely found. The author tries to present the real phenomenon which recently affects this entire world. In addition, in the modern era the depiction of reality is very important because it can convince readers about the ideas in the story. Here, *Finitude* appears as the depiction of reality because the author tries to provide an idea or a vision which is as close as possible to the reality. He tries to open the imagination and makes people think beyond the usual view.

Furthermore, what makes this novel interesting is that it depicts the life in the modern world with its real condition which is the same as the real world. It has a purpose to convince the readers that the issue which is presented also the part of the real world. In this novel, every single thing is discussed in details. MacDonald describes the process on how this earth is getting worse from time to time and he also shows the greed of humans in exploring nature. Then, because of the humans' greed, this earth is sacrificed and suffering.

The major environmental problem presented in *Finitude* is the effects of carbon dioxide emission. In the same way, this major problem leads to the worse

problem which is recently discussed among people in the world. Many people are worried because the problem threatens their life due to the fact that the problem is hazardous. Nature will be shifted by carbon dioxide emissions and there will be flood, drought, and many extreme disasters. Thus, the place where people live will go extinct. Winterton (2010:14) stated the following idea:

Finitude stands in the tradition of dystopian novels like Aldous Huxley's *Brave New World* and George Orwell's *1984*. These offered visions of nightmarish futures with the implicit message that this was how things might turn out if we didn't take action to change our ways. Huxley warned of eugenics, or tampering with the genes of our descendants, and Orwell of the totalitarianism that was inseparable, as he saw it, from communism. In the place of these fears, *Finitude* offers unchecked global warming, the danger almost everyone is now focusing on. The strange thing is that we haven't been deluged with novels on this theme already.

The researcher believes that *Finitude* becomes a good depiction of an environmental problem and this novel gives a clear depiction of today's earth. Many industrial sectors as the human's greed try to dominate nature because they try to exploit nature improperly and also shift the green areas' position. In other words, *Finitude* can be the mirror of today's event because it can show the kinds of damage done by human and what should people do in response to it. It means that this novel can move human's perception towards nature.

In this research, the researcher tries to show that there are some issues of environment which affect this earth in this recent year. Furthermore, the researcher will reveal how the nature is depicted in this novel.

B. The Focus of the Research

In general, the researcher has a focus on environmental issues because he thinks the most magnificent idea in MacDonald's novel is the theme of environment. The importance of the theme is beneficial because the way MacDonald writes the story in this novel is different. The environmental issue, here, points to the effects caused by the destructor and the destructor itself is human. Furthermore, environmental issue can be described as the phenomena which can cause a great damage. This great damage endangers environment surroundings and the life of living things. The environmental issue, here, refers to an uptodate issue discussed in these recent years, that is global warming. Global warming is the main cause of the world's great damage and global warming itself is the further effect of several causes. They are greenhouse effect, carbon cycle, and forecast.

Moreover, the researcher has another focus on how the environmental issues are depicted in *Finitude*. The environmental issues can be depicted through literary elements. Here, the researcher focuses on two dominant literary elements which are character and point of view. He considers that these two elements are prominent and play important roles in the story. Therefore, he focuses on discussing them in order to elicit the clear depiction of environmental issues.

In this framework of thinking, the researcher chooses *Finitude* which will be analyzed. He believes that this novel can be the best example for a novel containing environmental issues and having unique ways in how the author presents the story. MacDonald gives a clear depiction of a natural phenomenon

which recently happens. He tries to blend up-to-date issues into story because science fiction is supposed to deal with future events that are, from a rational viewpoint, never likely to happen. *Finitude*, by contrast, feels more like ecological prophecy and the author wants to show the portrayal of environmental issues. Thus, it gives an authentic depiction of the setting and characters.

Finitude is acclaimed as the pioneer of a book which becomes a wake up call about global warming. As stated by Winterton (2010:14) in Taiwan, “In Hamish MacDonald’s ‘Finitude,’ humankind teeters on the brink of extinction after failing to clean up its environmental act and save the planet...This is a coherent, lively and fast-moving attempt to put a widely feared future into imaginative, fictional form”. This statement makes the researcher sure of taking this novel as his research object because this novel can be the best example to show the readers and construct understanding about environmental issues.

The researcher chooses the theory of ecocriticism to guide in analyzing this novel. Ecocriticism is the idea of living in harmony with nature applied in literary theory because it deals with many problems of environment. Garrard (2004) states that ecocriticism has emerged and developed as a field of literary study that addresses and concerns with how humans relate or have connection with their nature or the environment in some literary works. In addition, Ecocriticism becomes the way to view the environment in literary form. In this research, the researcher uses the theory of ecocriticism by Cheryll Glotfelty. Glotfelty (1996) has defined ecocriticism as the study of the human and the non-human,

throughout human cultural history and involvement to critical analysis of the term human itself.

Therefore, the researcher uses the ecocriticism theory as the guidance in doing a research and the analysis of this research focuses on two cases. The first is showing the readers the kinds of environmental issues presented in the novel. The second one is showing how environmental issues are depicted in this novel.

C. The Objectives of the Study

Based on the focus of the research, the objectives of the study are as follows:

1. To identify the environmental issues existing in the novel.
2. To show the ways environmental issues are depicted in the novel.

D. The Significances of the Study

This study is expected to give some contributions to the following elements:

1. Academically, it can be the source and becomes the relevant theory for the reader in the future, especially those, whose concentration is literature. It can also give some knowledge in the eco-critical novel. In addition, for students that are still doing process thesis writing, they can get enough information about literary works which can reflect the social critics and also the use of ecocriticism theory. Moreover, it can enrich the knowledge of how the theory of literature can be beneficial for the environment and humans' life.

2. Practically, this study can be the way for other researchers to respect and preserve nature. It can develop their sensitivity dealing with environmental problems. It provides the real depiction and shows the negative impacts toward the Earth. Therefore, it will be the way to remind them in preserving nature. It will open their perspectives; widen their knowledge and experience about humans' behaviour toward nature and the effect on understandings of environmental problems in this world.

CHAPTER II

LITERATURE REVIEW

This chapter discusses the relationship between ecocriticism and literature as the underlying theory for applying ecocritical approach. The researcher also presents the brief history of environmental issues to elicit further information on the basic of the research. It will help readers of the research to understand what background is inherent in *Finitude*. An explanation about environmental issues existing in the novel is included as well. It will be the main concern which can support the readers' understanding towards the research objectives. It is the core for the research since the researcher decides to scrutinize the environmental issues and the ways they are depicted in the novel. In the last part, the researcher presents the framework of thinking which is used to arrange the idea of analyzing the novel.

A. Theoretical Review

1. Ecocriticism in Literature

In analyzing the novel, the researcher uses ecocritical studies. Ecocriticism has emerged and developed as a field of literary study that addresses and concerns on how humans relate or have connection to their natural surroundings or the environment in some literary works.

Literature, as people commonly understand, is often related to social disciplines or humanities, for instance law, sociology, politics, philosophy, and

even religion. They only develop knowledge and focus on those scopes of literature. Unfortunately, people tend to forget their existence in this world because they do not realize that the environment where they live is nature. In addition, some scholars of literature still think that the scopes of literature are only about moral and social matters. "No journals, no jargon, no jobs, no professional societies or discussion group, and no conference on literature and the environment" (Glotfelty, 1996: xvi-xvii). This supports the idea that literary experts who are usually sensitive to the social problems have less awareness of their environment.

Nevertheless, in the late of 1970s people started to think literature as an interdisciplinary subject (Glotfelty, 1996). As people know, literature covers all aspects of life and it touches the detail of every single part of living things. Environmental crisis becomes one aspect which is popular and up-to-date issue in this recent year. Therefore, some people begin to relate literature and environment in response to that case.

From the academics' perception, ecocriticism is dominated by the Association for the Study of Literature and the Environment (ASLE) which was formed at the annual meeting of the Western Literature Association in 1992. ASLE's missions are the representation of ecocriticism's missions. The first mission is to encourage the exchange of "ideas and information pertaining literature that considers the relationship between human beings and the natural world". Second, ASLE's mission is to support "new nature writing traditional and

innovative scholarly approaches to environmental literature, and interdisciplinary environmental research” (Glotfelty, 1996: vxiii).

Thus, the researcher views ecocriticism through its concentration due to the fact that it concerns with the relationships between living organisms in their natural environment as well as their relationships with that environment. By analogy, ecocriticism is concerned with the relationships between literature and environment or how humans’ relationships with their physical environment are reflected in literature.

One of the pioneers of ecocriticism is Cheryll Glotfelty. She has defined ecocriticism as the study of the relationship between literature and the physical environment (1996: xviii). She tries to make an analogy which says it is just like feminist criticism which examines language and literature from a gender conscious perspective. It is also like marxist criticism which brings an awareness of modes of production and economic class to its reading of texts; ecocriticism takes an earth-centered approach to literary studies. On the other hand, Kerridge (in Garrard, 2004:4) tends to see ecocriticism in a more cultural way. He states that most of ecocritics try to analyze the coherence and value of texts in order to respond to the environmental crisis in cultural spaces.

From both concepts about ecocriticism, the researcher tries to make a conclusion by saying that ecocriticism tries to focus on an earth-centered approach which analyzes on responses to the environmental issues encountered by today’s people.

Byerly (in Glotfelty, 1996:53) argues that ecocriticism actually launches a call to literature to connect it to the issues of today's environmental crisis. In other words, ecocriticism is directly concerned with both nature (natural landscape) and the environment (landscape, both natural and urban).

However, as stated by Love (in Glotfelty, 1996:225) that the attempt to synthesize natural phenomena with literary criticism raises conceptual problems because ecology itself is an abstract concept that emerges in a historical process of academic formation. Love explains further that the improvement of ecologically informed critical studies challenge some scholars to develop an environmental criticism in the scope of humanities and also to bring environmental consciousness to the literary criticism practice. He concludes that today more and more young academics respond to the global environmental crisis by turning to the new field of literary ecology. Thus, the ecological investigations and interpretations of the relationship between nature and culture in the scope of literary criticism inevitably lead to an understanding of environmental approach.

As a result, ecocriticism arrives with the promise of offering a unique combination of literary and natural scientific discourses. Ecocritics are not trying to debate about the problems in ecology, but they develop their own 'ecological literacy' in facing ecological problems (Garrard, 2004:5). This new eco theory responds to the global ecological crisis and addresses important environmental issues, specifically by examining values, in literary texts, with deep ecological implications. Next, ecocriticism position toward literature is also elaborated further by Glotfelty (1996:xix). She argues, as a theoretical discourse,

ecocriticism deals with the issues of human and the nonhuman. It sees the relationship between nature and culture, especially “the cultural artifacts of language and literature”. Furthermore, she notifies that there is a borderline between ecocriticism and the other literary theories in seeing the world. In general, literary theory examines the relations between writers, texts, and the world. In addition, most of the literary theories see the world identical to the society or the social sphere. However, ecocriticism expands the idea of the world to embrace the entire ecosphere. Glotfelty (1996) also believes that since everything is connected to each other, literature has a significant role in a complex system, in which energy, matters, and ideas interact with each other. She states further that ecocriticism, then, takes an earth-centered approach to literature, and an ecological approach to literary criticism. She considers that ecocriticism mainly concentrates on how literature interacts with and participates in the entire ecosphere. Therefore, ecocriticism appears not to show how to analyze or solve ecological problem, but it is more likely to discuss the ecological problem from literature point of view.

In his essay, "Literature and Ecology: *An Experiment in Ecocriticism*," William Rueckert (in Glotfelty, 1996:107) defines ecocriticism as "the application of ecology and ecological concepts to the study of literature, because ecology (as a science, as a discipline, as the basis for human vision) has the greatest relevance to the present and future of the world". In this context the possible relations between literature and nature are examined in terms of ecological concepts. Ecocriticism, then, attempts to find a common ground between the human and the

nonhuman to show how they can coexist in various ways because the environmental issues have become an integral part of people's existence. This case is a proof that ecocriticism tries to find a more environmentally aware position in literary studies.

Howards (in Glotfelty, 1996:78) argues that the task of ecocriticism, then, is to formulate a conceptual foundation for the study of interconnections between literature and the environment. He states further that literature can be perceived as an aesthetically and culturally constructed part of the environment, since it directly addresses the questions of human constructions, such as meaning, value, language, and imagination, which can, then, be linked to the problem of ecological consciousness that humans need to attain. He concludes that within this framework, ecocritics are mainly concerned with how literature transmits certain values contributing to ecological thinking.

Humans start to think about global ecological crisis and consciousness raising in environmental thinking. Therefore, it indirectly forces literary scholars to recognize the important roles literature and criticism play in understanding man's position in the ecosphere. This, however, raises the question of the politization of literature if the critical focus falls only on extra-textual themes existed literary text. It is due to the fact that people will treat literature as a means of moral instruction.

Ecocriticism can and indeed should explore the ways in which literature and ecology interact. However, it is important to note that literature should not be used as a pretext for examining the ecological issues. In other words, the task of putting

literature in question in order to save nature implies a reductionist approach. Since poststructuralist theory "has sharpened the focus on textual and intertextual issues" (Strehle, 1992:2). He argues further that the ecocritical reader cannot go back into perceiving literary texts as transparent media that un-problematically reflect a phenomenal reality. Therefore, he thinks that the true concerning with ecocriticism ought not to be with obsolete representational models, but with how nature gets textualized in literary texts to create an eco-literary discourse that would help to produce an intertextual as well as an interactive approach between literary language and the language of nature.

The researcher considers that his research is based on the examination of the ecological issues because he tries to seek the kinds of environmental issues existing in *Finitude*. However, he did this due to the fact that showing the environmental issues can help the readers of the research to create an intertextual meaning. In other words, it means that he tries to make the environmental issues textualized in a literary text.

Nevertheless, Christopher Manes (in Glotfelty, 1996:15) notes, "To regard nature as alive and articulate has consequences in the realm of social practices". Manes argues that knowledge about nature is always conditioned by historical and social functions of power. In this respect, what Rueckert calls "literary ecology" inquiries into the ways in which nature is marginalized, silenced, or pushed, in Manes's words, "into a hazy backdrop against which the rational human subject struts upon" (1996:16). This outlook shows that literary ecology is a projection of human ideas about human responsibility into the natural environment.

Nevertheless, eco-literary discourse can address how literary texts articulate the silence of nature, what nature feels, and to what consequences. Thus, ecocriticism can explore and elaborate what people usually call a manipulation of nonhuman or fantasy world in literature. It can also discuss how this manipulated world gets marginalized into human language. This way of thinking is supported by Legler (1997:227) who argues that ecocriticism, in this framework, offers an "analysis of the cultural constructions of nature, which also includes an analysis of language, desire, knowledge, and power".

Further explanation about ecocriticism comes from Howarth (in Glotfelty, 1996:69). In the *Ecocriticism Reader*, he defines ecocriticism as a name that implies more ecological literacy than its advocates now possess, unless they know what embattled course ecology has run during its history. Eco and critic both derive from Greek, *oikos* and *kritis*, and in tandem they mean "house judge," which may surprise many lovers of green, outdoor writing. A long-winded gloss on ecocritic might run as follows: "a person who judges the merits and faults of writings that depict the effects of culture upon nature, with a view toward celebrating, berating its despoilers, and reversing their harm through political action."

It can be assumed that ecocriticism tries to give comments or critics toward a literary text which talks about the effects of culture upon nature. Ecocriticism also wants to reverse the effects through a certain action which has something to do with power and strategic position.

Furthermore, Garrard (2004) states that ecocriticism is a new critical movement that attempts to link literary criticism and theory with today's ecological issues. It studies the relationship between literature and the science of ecology by applying ecological concepts to literature. Its aim is to synthesize literary criticism and the environmental matters by focusing on the literary analyses of the representations of nature in literary texts, and the literary constructions of the environmental crisis in eco-literary discourses. Ecocriticism aims to bring a transformation of literary studies by linking literary criticism and theory with the ecological issues at large.

As a result, ecocriticism deals with many aspects of life, especially to the nature. Literature, in a broad way, touches the part of environment as it tries to identify the relationship between literature and physical environment and to show the problems of environment. This theory also brings a new perspective towards nature. It appears as the way of presenting environmental issues. In addition, it is the way literature articulates what nature speaks and feels in order to make people understand the condition where they live in.

2. Global Warming

It has been over one hundred years since global warming was officially discovered. The pioneering work in 1896 by the Swedish scientist Svante Arrhenius, and the subsequent independent confirmation by Thomas Chamberlin, calculated that human activity could substantially warm the Earth by adding carbon dioxide to the atmosphere (Maslin, 2005:24).

The history of the global warming hypothesis clearly shows that science is deeply influenced by society and vice versa. Society plays important roles in science development because it cannot be improved if the society does not develop anything. The researcher also thinks about the same context to the global warming. Global warming is one part of the phenomena which are developed by society. For that reason what people find is the fundamental science of global warming. “It was carried out 50 years ago under the perceived necessity of geosciences, but was not the main concern as a theory until the late 1980s” (Maslin, 2005).

Global warming has become familiar to many people as one of the important environmental issues. Many opinions have been expressed concerning it, from local people to scholars. An increase in average global temperatures moves the earth to the worst condition that is global warming. Slowly but surely the information about global warming seems to reach the most obstinate ignorance. Maslin (2005) states that global warming is one of the most controversial issues of 21 century; it challenges every single part of global society and the problem lies on the concentration. Indeed, global warming is the part of scientific concentration, but its scopes are wide. It encompasses economics, sociology, literature, geopolitics, local politics, and even individual choice’s lifestyle.

Global warming changes all aspects of living things. It is more than the usual natural disaster which usually attacks each country. Its risk is the worst disaster and global warming threatens the security of all living things in the Earth. For that reason, people start to realize this harmful phenomenon.

Maslin (2005:1) states that global warming is 'caused by the massive increase of greenhouse gases, such as carbon dioxide, in the atmosphere, resulting from the burning of fossil fuels and deforestation. There is clear evidence that the concentration of carbon dioxide increases to the highest level. Some scientists believe that this is causing the earth to warm faster than any other time since many years ago. This thing leads to an assumption which says that the increasing temperature on the Earth is because of greenhouse gases through industrialization. It causes the amount of sunlight to get trapped and heat the Earth.

The most recent report by the Intergovernmental Panel on Climate Change (IPCC), amounting to 2,600 pages of detailed review and analysis of published research, declares that the scientific uncertainties of global warming are essentially resolved. This report states that there is clear evidence for a 0.6°C rise in global temperatures and 20 cm rise in sea level during the 20th century (Maslin, 2005:1)

From the data which have been collected above, it can be concluded that the earth is getting warmer from time to time and the main cause is humans' deeds. It cannot be denied that it will bring more negative impacts for the people's life and harms all living things.

The negative impacts which may happen are very close to the humans' life and they endanger the life of all living things. The main effect is in the weather or climate as a general form because variations in day-to-day weather are occurring all the time and they are indeed part of human life. The climate of a region is its average weather over a period because it can be a few months, a season or a few

years. People are quite familiar to variations in climate. Those people particularly notice to the extreme situations and the climate disasters. Most of the worst disasters in the world are, in fact, weather or climate related. News media are beneficial in humans' life because they are constantly bringing humans to public notice as they occur in different parts of the world. For example, people point to tropical cyclones (called hurricanes or typhoons), wind-storms, floods, tornadoes and droughts whose effects occur more slowly, but they are the most apocalyptic of all (Maslin, 2005).

Furthermore, there are abundance of disasters and more negative effects which follow global warming. Those can make this earth suffering; even they can make massive disasters, so that people should think what will happen in the future. People who live during the process of destruction probably will not feel the overwhelming impacts. However, the next generation will completely get the impacts. Therefore, all people should think wisely because it is not only about today's life but also about the complexities of future. Moreover, global warming cannot stand by itself and there must be certain phenomena which are accelerating it. These phenomena become the key point why global warming could happen. According to Archer (2011), they are the greenhouse effect, carbon cycle, and forecast.

a. The Greenhouse Effect

The existence of the greenhouse effect was argued for by Joseph Fourier in 1824. The argument and the evidence was further strengthened by Claude Pouillet in 1827 and 1838, and reasoned from experimental observations by John

Tyndall in 1859, and more fully quantified by Svante Arrhenius in 1896 (Soden, 2000:441)

The greenhouse effect itself is one of the major causes of global warming. Since the evidence is found during the observations, people start to understand what is meant by greenhouse effect. The problem is people usually think that global warming is the same as greenhouse effect. This is because the correlation between them is obvious. The existence of global warming is caused by greenhouse effect which is uncontrolled. Therefore, chronologically, the greenhouse effect appears at first and will be followed by global warming.

According to Hammer (2001:90-91), the greenhouse effect is a process by which thermal radiation from a planetary surface is absorbed by atmospheric greenhouse gases, and is re-radiated in all directions. Since part of this re-radiation is back towards the surface and the lower atmosphere, it results in an elevation of the average surface temperature above what it would be in the absence of the gases.

Furthermore, he states that greenhouse effect warms the lower part of a planet's atmosphere when heat is trapped there by gases, such as water vapor, carbon dioxide (CO₂), methane, and nitrous oxides which prevent it from escaping into space. As a result of their molecular structure, these gases are dominant absorbers and emitters of infrared radiation. They absorb infrared energy from a planet's surface and reemit it in all directions. A significant fraction of this reradiated energy is directed back to the planet's surface, resulting in an increase in average temperatures (2001:92).

The greenhouse effect is a natural phenomenon that has been occurring on Earth and other planets for millions of years. It allows the Earth to support life if heat were not trapped in the Earth's atmosphere; the planet would be cooler than it is now. A large percentage of the Earth's natural greenhouse warming is caused by water vapor. If the greenhouse effect were enhanced, the Earth would become warmer, which could cause problems for humans, plants, and animals.

In the mid-1950s, Dutch (2000:514) argues that an enhanced greenhouse effect was recognized as a concern. As a result of anthropogenic (human-induced) activities, atmospheric concentrations of the greenhouse gases (GHGs) were on the rise. He also states this trend was associated with an increasing global atmospheric temperature. Industrialization resulted in an increase in the use of fossil fuels, which increased GHG emissions. He concludes that the global mean annual temperature rose by approximately 0.5° Celsius between 1890 and 2000. Most of that increase occurred after.

From the data above it can be concluded that the Earth sooner and faster gets heat. Heat was trapped inside the Earth because of the actions done by humans and this heat gradually increases the Earth's temperature. It can also happen because of the uncontrollable gases quantity of the greenhouse. The increasing temperature leads humans to the extinction because it can endanger the environmental life. Moreover, there are some experts who try to breakdown the greenhouse effect theory. They think the greenhouse effect appear as a result of some phenomena. According to Archer (2011), the greenhouse effects are caused by three causes. They are presented as follows:

1) Blackbody radiation

Archer (2011:12) defines blackbody radiation as energy travels through a vacuum between the Sun and the Earth by means of electromagnetic radiation, or light. Objects can absorb energy from light, and they can also emit light energy, if the vibrations of their chemical bonds generate oscillations of the electrical field. An object that can emit all wavelengths of light is called a blackbody.

This can be assumed that energy can travel between the Sun and the Earth through electromagnetic radiation or light. For that reason, blackbody radiation can happen because the Sun transfers a light energy to the Earth and it emits again to the atmosphere. The simple explanation is when people can feel the heat of the sun through its light, it can be implied that there is a process of blackbody radiation.

2) The greenhouse gases

According to Houghton (2009:35), greenhouse gases (GHGs) are trace atmospheric gases that trap heat in the lower atmosphere, causing global warming. Such warming has been associated with droughts, tornadoes, ice melting, sea-level rise, saltwater intrusion, evaporation, and other climatic changes and effects. Its variable components include carbon dioxide (CO₂), water vapor (H₂O), methane (CH₄), sulfur dioxide (SO₂), ozone (O₃), and nitrous oxide (N₂O).

From the information which can be derived from Archer's classification, it can be concluded that greenhouse gases is a collection of many gases which

contribute to the cause of global warming. Therefore, this data can be a basic foundation for the researcher to classify which one belongs to greenhouse gases.

3) Heat and wind.

Dutch (2010:845) states that heat is the energy needed to raise its temperature one degree Celsius, while wind is caused by the uneven solar heating of the Earth's surface, which creates areas of high and low atmospheric pressure. Further, he explains that the significance of this topic to global warming is energy sources which can include incoming solar radiation, energy trapped by greenhouse gases, waste energy from machines or industrial processes, and so forth. After scientists determine the net energy change in Earth's climate system, they need to calculate the total heat capacity of the climate system, including Earth's atmosphere, oceans, and surface.

Heat and wind are needed as energy sources for this Earth because they are basic components to support life on Earth. However, unfortunately if humans are not wise to manage this energy, then it can be ascertained that destructions will continuously happen. For that reason, good management and calculation are needed to measure or control the intensity of wind circulation through solar heating and heat trapped on the Earth.

b. The Carbon Cycle

It is also explained further by Archer (2011:100) that photosynthesis and respiration become two physiological processes of living things. The biological carbon cycle depends on these two processes. The researcher tries to illustrate

what is meant by photosynthesis. Photosynthesis is the process by which plants convert light energy from the Sun into chemical energy in the form of carbohydrates. Photosynthesis produces food for all living organisms, directly or indirectly, in all ecosystems. In addition, it releases oxygen and utilizes CO₂ (carbon dioxide) and thus becomes an indispensable link in the carbon cycle.

Then, the chemical energy in the form of carbohydrates will be used to incorporate carbon dioxide into organic compounds. This further process is called carbon fixation. The organic compounds can be used by organisms as a source of energy through the process of respiration, which breaks chemical bonds to release energy for use. “This breakdown of organic molecules provides energy to living cells and releases CO₂ back to the environment as a by-product” (Dutch, 2001:165).

Thus, the researcher conclude that carbon cycle is the process where the organic compounds in green plants do the photosynthesis process and are followed by respiration as a source of energy. The product of incorporate photosynthesis and carbon dioxide will be released in the atmosphere through respiration process. Then, the product will be released back to environment as the energy for living things.

Here, Archer tries to divide the carbon cycle into two phenomena which closely refer to the main causes. They are presented as follows:

1) Carbon on Earth

Archer (2011: 102) argues that carbon exists in a range of oxidation states and chemical forms. Carbon is most stable in the oxidized form, on the Earth

mostly as CO₂ (carbon dioxide) and CaCO₃ (calcium carbonate). Photosynthesis converts carbon to higher-energy reduced form, both to store energy from the Sun and because the versatility of reduced carbon chemistry makes a natural building block for life. What is meant by carbon on the Earth is the carbon which is contained on the Earth. It is created by sedimentary rock and fossil fuels. Carbon itself can be found in the lithosphere. Carbon contains sediment and sedimentary rocks, such as chalk, limestone, and dolomite.

The atmosphere contains only a tiny fraction of the carbon on Earth. The terrestrial biosphere has several times more carbon if soil carbon is included in the reckoning. The seasonal breathing of the terrestrial biosphere is measurable in a seasonal cycle of atmospheric CO₂. The ocean contains 50 times as much carbon as the atmosphere and is apparently responsible for large changes in atmospheric CO₂ over 100,000-year glacial cycles, although no one is quite sure how. On timescales of millions of years, the weathering of igneous rocks consumes CO₂, stabilizing atmospheric CO₂ and the climate of the Earth in the process (Archer, 2011:86).

As a result, the researcher can elicit information about carbon and can classify that there are some kinds of carbon which exist on the Earth. Carbon can be found in atmosphere, ocean, and land. They are connected each other, but the amount should be balance. When there are more carbon, the Earth will be polluted and this phenomenon can lead to the global warming.

2) Fossil fuels and energy

According to Archer (2011:103), fossil fuels are any combustible deposit of carbon of biological origin created over millions of years of geologic history. Fossil fuels store the chemical energy created over hundreds of millions of years as accumulated layers of plant and animal remains were subjected to heat and pressure. These organic residues transformed into coal beds, pools of oil, and pockets of gas. They include coal, oil, natural gas, oil shale, and tar sands. Since these fuels are no longer being created, they are nonrenewable resources. Equally important, when burned, the carbon unites with oxygen in the atmosphere to produce carbon dioxide (CO₂), the main culprit responsible for anthropogenic global warming.

The data collected above makes the researcher get information about kinds of fossil fuel and the formation process of it. Fossil fuels contribute to the global warming because it contains much carbon especially carbon dioxide. Then, when there is uncontrollable intensity of fossil fuels' burning increase can make the Earth get warm. Then, if the Earth gets warmer from time to time, the survival of all living things are endangered.

c. The Forecast

The researcher assumes the forecast is supposed to deal with the existences of weather and climate. To understand this topic, people should focus on two basic knowledge. They are the difference between weather and climate, and the forecasting climate.

1) Weather versus climate

Archer (2011) argues that people should differentiate on the outset between *climate* and *weather*. *Weather* is chaotic, which means that it cannot be forecast very far into the future. Small errors in the forecast grow with time, until eventually the forecast is nothing but error. The word *climate* means a kind of average of the weather, say over 10 years or more. Archer also explains that weather models cannot reliably predict whether it will rain or be sunny on a particular day very far into the future, but climate models can hope to forecast the average rainfall of some location at some time of year. Archer concludes that weather is chaotic, but the average is not chaotic and seems to be in some ways predictable.

The researcher assumes that weather is the physical condition or state of the atmosphere at any given time. It is what is happening in the atmosphere at any time or over any short period of time. If there were no atmosphere, there would be no weather. The principal elements of weather are temperature, pressure, winds, moisture, and precipitation. Thus, the weather of any place is the sum total of its temperature, pressure, winds, moisture, and precipitation conditions for a short period of a day or a week.

On the other hand, the researcher concludes that climate is an aggregation of near-surface atmospheric conditions and weather phenomena over an extended period in a given area. It is characterized by statistical means and variables such as air temperature, precipitation, winds, humidity, and the frequency of extremes weather. The time period is typically thirty years, as described by the World Meteorological Organization (WMO).

2) Forecasting climate change

Archer (2011) explains that the fundamental process that determines the temperature of the Earth is the balance between energy flowing to the Earth from the sun versus energy flowing away from the Earth into space. Heat loss from the Earth to space depends on the Earth's temperature.

Human activity has the potential to alter climate in several ways. Rising CO₂ concentration from combustion of fossil fuel is the largest and longest-lasting human-caused climate-forcing agent, but people also release or produce other greenhouse gases, such as methane and other carbon molecules, nitrous oxide, and ozone.

Houghton (2009:101) states that many of these climate drivers give respond to climate, leading to stabilizing or destabilizing feedbacks. He also explains that reconstructions of prehistoric climate changes often show more variability than models tend to predict, presumably because there were positive feedbacks in the real world that are missing in the models. For example, the climate cools, so forest changes to tundra, allowing more of the incoming sunlight to be reflected to space, thereby cooling the climate even more. He concludes that a climate model in which the forests do not respond to climate would underestimate the total amount of cooling.

Archer (2011:135) argues further that the forecast for the coming century is also tricky because some parts of the climate system take a long time to change, such as melting an ice sheet or warming the deep ocean. It is hard enough to

predict the equilibrium climate response to some change in forcing, but it is even harder to predict how quickly it will change.

After scrutinizing the explanation both of basic knowledge, the researcher can conclude the idea of the forecast. It is the analogy between the forecast to the global warming itself. The forecast refers to the term of climate change as people know that climate change is the further effect of the increasing temperature of Earth. The impacts will be the melting of glaciers, hot weather, and so on. Due to these impacts which happen simultaneously, it creates such a phenomenon. Normally it is usually called climate. When there is a change in the concentration of climate, it will lead to the climate change. For this simple analogy, people will understand that the increasing of the temperature of the Earth as the impacts of climate change is closely related to the cause of global warming.

3. The Elements of Literature

According to Stanford (2006), there are several kinds of literary elements. Here the researcher focuses on two elements. These literary elements become the main point where the story is presented. Each element has a role to construct story. They are the system of story construction and each of them cannot stand alone. They must be interrelated each other. Therefore, these elements are really important in constructing a good story. These elements are presented as follows:

a. Characters and characterization

Characters are the fictional people who are part of the action of a literary work. Characters hold an important role in constructing story. When there are no characters at all, there will be no story. In literature, a character is a representation

of a human being presented to the readers or people through the depictions of actions, conversations, description, and reflection.

According to Stanford (2006), the objective of characterization in literature is the presentation of both externally perceived person and primarily the inner person. Some of people still consider that the important part of literary characterization is the external perceived person. However, he states further that the combination of both external and internal is the most important one. Those expressed and unexpressed inner thoughts, aims, motives, sad, joys, fears, frustrations, and many things. It really depicts human personalities. It is true that sometimes people tend or want to have a good presentation of characters. They are cheerful, loveable, and charming although the author presents characters whom people dislike or even hate as well.

In a story or play emphasizing a major character, every reader may expect that each action or speech, no matter how small, is part of a total presentation of the complex combination of both the inner and outer self that constitutes a human being. The deliberation of actions, interactions, and speeches make the story interesting. Through this parts, authors will help the readers to understand and appreciate not only their major characters but also life itself. Therefore, people should understand some important things as the important aspects of the characters.

According to Roberts (2003), he divides characters' aspects which should be considered. They are presented as follows:

1) Character's traits

In studying literature a literary character try to determine the character's outstanding traits. A trait is a quality of mind or habitual mode of behaviour that is evident in both active and passive ways. This behaviour is something which deals with people's everydayness, for instance, never repaying the borrowed money, supplying moral support to friends and loved ones; being a person on whom people rely, being willing to share; caring, and listening to others' thoughts and problems; avoiding eye contact, taking the biggest portions, or always thinking oneself the center of attention. Occasionally, the traits the readers encounter are minor and therefore negligible, but in certain cases a trait may be a person's *primary* characteristic. Thus, characters may be ambitious or lazy, anxious, aggressive, thoughtful, open or secretive, straightforward, and so on.

By understanding the sort of list above, people will understand, be able to analyze, and develop conclusions about a character.

2) How authors disclose a character in literature

Roberts (2003) states that authors use five methods of bringing their characters to life. Using the reader's own knowledge and experience to create judgments about the qualities of the characters being revealed is the important thing. The five methods are presented as follows:

a) Actions by characters reveal their qualities

What characters do is the best clue to understand what they are. Actions may also signal qualities such as weakness, deceit, inner conflict, sudden realization, or

other changes. Therefore, what characters done through their actions and characterization give people an understanding about their qualities.

b) The author's descriptions tell people about characters

The revelation of appearance and environment help readers to understand much about a character's social and economic status, and they also tell the readers about a character's traits.

c) Characters' speech *Dramatic Statements and Thoughts* reveals what they are like

The speeches of most characters are functional, but it is essential to keep the action moving along. This part can be aids for the readers to draw conclusions. Moreover, characters may also use speech to obscure their motives, perhaps by lying, or omitting details.

d) What others say tells people about a character

By studying what characters say about each other, the readers can enhance their skills in understanding the character being discussed. Ironically, speeches often indicate something other than what the speakers intend, perhaps because of prejudice, stupidity, or foolishness.

e) The author speaking as a *Storyteller* or an *Observer* may present judgments about characters

What the author, speaking as a work's authorial voice, says about a character is usually accurate, and the authorial voice can be accepted factually. However, when it deals with the interpretation of actions and characteristics, the author him or herself can create assumption the role of a reader or critic whose opinions are

open to question. For that reason, authors frequently avoid interpretations and devote their skill to arrange events and speeches so that readers can determine their own conclusions.

3) Types of characters: round and flat

Many times a story, play, or poem shows a character who changes. This character is usually called a dynamic character. To be interested in the change, people need to know fairly well that the characters must come alive for readers. To capture readers' interest, the author must create a well-developed or round character rather than a flat character who shows only one or two characteristics.

a) Round characters undergo change

The basic trait of *round characters* is that people learn enough about them to permit people or readers to conclude that they are full, lifelike, and memorable. Round characters, however, may be either static or dynamic. That is, *they recognize, change with, or adjust to circumstances*. These changes may be shown in (1) actions, (2) the realization of new strength and therefore the affirmation of previous decisions, (3) the acceptance of a new condition and the need for making changes, or (4) the discovery of unrecognized truths.

In addition, a round character usually plays a major role in a story; he or she is often called the hero or heroine. The thing which should be remembered by people is, some round characters are not particularly heroic; however, it is preferable to use the more neutral word *protagonist*. As people read literature, there are two other important terms to keep in mind for describing people: *protagonist* and *antagonist*. The protagonist is the major character with whom

readers generally sympathize, while the antagonist is generally not sympathetic or tends to be against protagonist character.

b) Flat characters stay the same

Unlike round characters, *flat character* who only has one or two characteristics is usually static. He or she does not change because of lacking of knowledge or insight, or sometimes because the character is stupid or insensitive.

In some cases, flat characters are prominent in certain types of literature, such as westerns, and police and detective stories, where the focus is less on character than on performance. Such characters might be lively and engaging, even though they do not develop or change. They must be strong, tough, and smart enough to perform certain actions such as solving a crime, overcoming a villain, or finding a treasure. The term *stock character* refers to characters in these repeating situations. Stock character represent many common traits. They are representative of their class or group. This character stays flat as long as they do no more than performing their roles and exhibit conventional and individual traits. When they possess no attitudes except those of their class, they are often called *stereotype* characters because they all seem to have been cast in the same mold. Noting whether a round character changes or remains the same can lead the readers to ask significant questions about the work they are reading.

4) Reality and probability: verisimilitude

Characters in fiction should be true to life. For that reason, their actions, statements, and thoughts must all be what human beings are likely to do, say, and think under the conditions presented in the literary work. This is the standard of

verisimilitude, probability, or plausibility. Sometimes, readers should be ready to admit that there are people in life who perform their tasks' characters which are difficult or impossible. They can always be cheerful, helpful, easily to get victory, and many more. However, such characters in fiction would not be true to life because they do not fit within normal or usual behaviour. This becomes the foundation for the readers to distinguish between what characters may possibly do and what they must frequently or most usually do.

Nonetheless, probability does not rule out surprise or even exaggeration. For example, the sudden and impossible changes are improbable. Writers render probability of character in many ways. Works give clear depiction so that it is as close as possible to the reality, or naturalistic. They set up a pattern of everyday probability. In other words, less realistic conditions establish different frameworks of probability, in which characters are expected to be unusual.

b. Point of View

The researcher chooses point of view as a subject which should be discussed because it becomes the foundation of understanding the story. He thinks point of view is a prominent thing in constructing the story because this element of literature plays an important role to make the readers understand about the perception or opinion towards story which is different from one people to another. Therefore, point of view is the element which deals with difference and it refers to the readers who create meaning of the story.

According to Stanford, point of view is “the position from which the details of the work are reported or described” (2006:40). From this definition, people can

simply understand that point of view deals with people's perception, in which he or she sees the details of a story. When people talk about politician's point of view on a certain issue, it usually refers to his or her attitude toward it and this can be support or against. In fiction, however, the term *point of view* is employed in a specialized sense. It refers to *speaker*, *narrator*, *persona*, or *voice* created by authors to tell stories, present arguments, and express attitudes and judgments. Point of view involves not only the speaker's physical position as an observer and recorder but also the ways in which the speaker's social, political, and mental circumstances affect the narrative. For this reason, point of view is one of the most complex and subtle aspects of literary study.

Due to the reason of having the terms of speaker in point of view, the researcher thinks about the difference between speaker and author should be revealed. Distinguishing author from speaker in a literary work is essential. The author, here, refers to the person who writes certain literary works. He or she often writes about incidents or people from his or own lives. He writes through a created voice that is not necessarily identical to his or her own. On the other hand, speaker or usually called *persona* is the voice that is heard in a poem who describes what the problem is received and responded to the discussed problem.

In a response to these terms above, people also have to take a look at *Narrator*. *Narrator* just as the voice in a poem is called the speaker; the voice that tells a story (in a novel or short fiction) is called the narrator. Therefore, knowing the difference between three of them is very important to understand point of view.

The readers of this research should bear in mind that authors try not only to make their works vitals and interesting but also to bring their *presentations* alive. The presentation is similar to a dramatic performance. For instance: in a play, the actors are always themselves, but in their roles they *impersonate* and temporarily *become* the characters whom they act. In fictional works, not only do authors impersonate or pretend to be characters who do talking, but they also *create* these characters.

Furthermore, point of view may also be considered as the centralizing or guiding intelligence in a work. It becomes the mind that filters the literary experience and presents only the most important details to maximize the impact of a story. Narrative points of view can be divided in two sorts, *participant* (or *first person*) and *nonparticipant* (or *third person*) (Barnet: 2003). That is, the narrator may or may not be a character who participates in the story. Each of these two divisions can be subdivided: participant (first-person narrative): narrator as a major character and narrator as a minor character. Nonparticipant (third-person narrative): omniscient, limited omniscient, and objective.

In the participant points of view, sometimes the narrator is also a character in the story. In this case, the narrator uses the first-person (“I” or “we”). First-person narrators can, of course, report only what is in their own minds or what they see or hear (Stanford, 2006:38). In addition, the narrator in first-person narrative can be a major or a minor character in the story. Whether a major or a minor character, a first-person narrator is a particular character, seeing things in a particular way.

The reader should not assume that the speaker is necessarily a reliable source. Some, in fact, are notably *unreliable narrators*.

In nonparticipant points of view, the teller of the story does not introduce himself or herself as a character. In fiction, the narrator is sometimes omniscient. Omniscient is narrator who knows everything and can report both external actions and conversation as well as the internal thoughts of all characters and who often provides evaluations and judgments of characters and events. A variation is the limited omniscient narrator, who sees the mind of only one character (Stanford, 2006:38). Obviously, when the thoughts of only one character are reported, readers know more about that character than any other and see the events of the story as well as the other characters through that character's eyes. Nevertheless, omniscient, limited omniscient, and first-person narrators may also make evaluations and judgments of characters and events. Moreover, the narrator sometimes is objective (also called the dramatic point of view). It is like a sound camera that reports what it sees and hears. Stanford defines objective narrator as a narrator who shows external events and conversations but cannot look inside the minds of characters or offer evaluations and judgments (2006:41). Here the narrator simply reports dialogue and action with minimal interpretation and no delving into character's minds. The objective narrator (dramatic narrator), as the name implies, approaches the methods of plays, where readers are provided only with set descriptions, stage directions, and dialogue, and thus must supply motivations that are based solely on the external evidence.

B. The Previous Research Studies

In order to obtain authenticity of this research, the researcher found four previous research findings which have similar correlation with the topic discussion. Nevertheless, each previous research finding has significant differences to this research.

The first research is *Ecocriticism: Natural World in the Literary Viewfinder* by Prof. Dr. Serpill Opperman (1999) from Hacettepe Üniversitesi Edebiyat Fakültesi Dergisi. In that research, Opperman discusses the conceptual problems raised by such a synthesis and the questions posed by the possible interrelations between literature and ecological concerns. It argues for the need of an expansive theoretical approach in studying the intersections of the literary and the natural phenomena. It also emphasizes the importance of eco-literary discourses in the practice of ecocriticism through an ecocritical evaluation of two postmodern novels. Postmodern fictions like Graham Swift's *Watertand*, and Jim Crace's *The Gift of Stones*, thematize geographical, biological and ecological issues to underline the changes in the reality around people. In short, the research focuses on the new ecologically oriented literary criticism in the literary viewfinder. It is similar to the researcher's, which is ecologically oriented. Nevertheless, the differences lie on the focus and also object of the research (main source). The researcher's focus is to seek the environmental issues existing and the ways they are depicted, while the object of the research is *Finitude*. The source and focus are different, and then the discussion will be different as well.

The second research is *E. B. White's Environmental Web* by Lynn Overholt Wake (2007) from University of Nebraska – Lincoln. The main data are taken from White's three novels. They are *Stuart Little*, *Charlotte Web*, *The Trumpet of the Swan*. This study explores how White's engagement with the natural world contributes to the renewal of human collective environmental imagination. To come to the objective, Wake applies the ecocriticism theory to analyze the problem. Through a simultaneous research, he finally finds that for White the world is fundamentally inhabited both by humans and non-human animals; his work reflects concern for the habitat of both. Moreover, Wake's closing study is a chapter connecting White to the wider web of environmental literature through a focus on the nature of story, an emphasis on animal presence, and an expansive sense of ecocriticism that includes children's literature. The differences of the research lie on the focus and its object of the research. Wake focuses on the articulation of animal feeling, while the researcher concentrates on the articulation of nature feeling in general. In addition, Wake's study uses children's literature as the object and as contrast, the researcher uses adult literature as the object of his research.

The third research is *Eco-Dystopia: Reproduction and Destruction in Margaret Atwood's Oryx and Crake* by Allison Dunlap (2013) from Pennsylvania State University. This research main data are taken from Margaret Atwood's novel *Oryx and Crake*. The aim of the research is to argue that Margaret Atwood's *Oryx and Crake* participates in a vibrant debate among scholars of science, animals, and feminist studies. This research demonstrates the ways in

which the novel criticizes ecotopianism. By critiquing both capitalist science and cautions the reader against the plans for the elimination of suffering, regardless of whether those plans are driven by economics, science, or environmentalism. Therefore, the focus of this research is indeed different from the researcher's. Dunlap focuses on the motive why people do harmful deeds towards nature. On the other hand, the researcher tries to emphasize on the environmental issues existing in the novel and the ways environmental issues are depicted in *Finitude*.

C. The Conceptual Framework

There are many literary works such as, drama, short story, poetry, prose, and novel. As a form of literary work, a novel is an imitation of life which has various topics or stories. It can be dealt with life experiences, people everydayness, events, conflicts and they can be real experience or fiction. It can be the good portrayal of people's life. Therefore, due to the fact that is presented above it can be concluded that environmental issues which exist in *Finitude* novel are also real.

There are some people who say that *Finitude* by MacDonald belongs to the ecocritical novel because the claim goes toward the depiction of environment in today's life. This novel portrays how people's behaviour lead to the chaos or destruction of the world and it also entrusts people to have insight towards environmental issues depicted. Considering these reasons, the researcher is interested in revealing the environmental issues in *Finitude* in order to elicit the evidences based on the theory global warming itself as the main environmental issue in *Finitude*. Nevertheless, global warming cannot stand alone and there are

some environmental issues which become the causes of it. They are the greenhouse effect, carbon cycle, and forecast. After elaborating the environmental issues in *Finitude* novel, the researcher invites the readers of his research to know about the ways environmental issues are depicted in this novel. It is expected that the readers can derive understandings of the depiction's process of environmental issues.

Moreover, as a content analysis research, this research applies framework of thinking. The framework of thinking is presented in the diagram as follows:

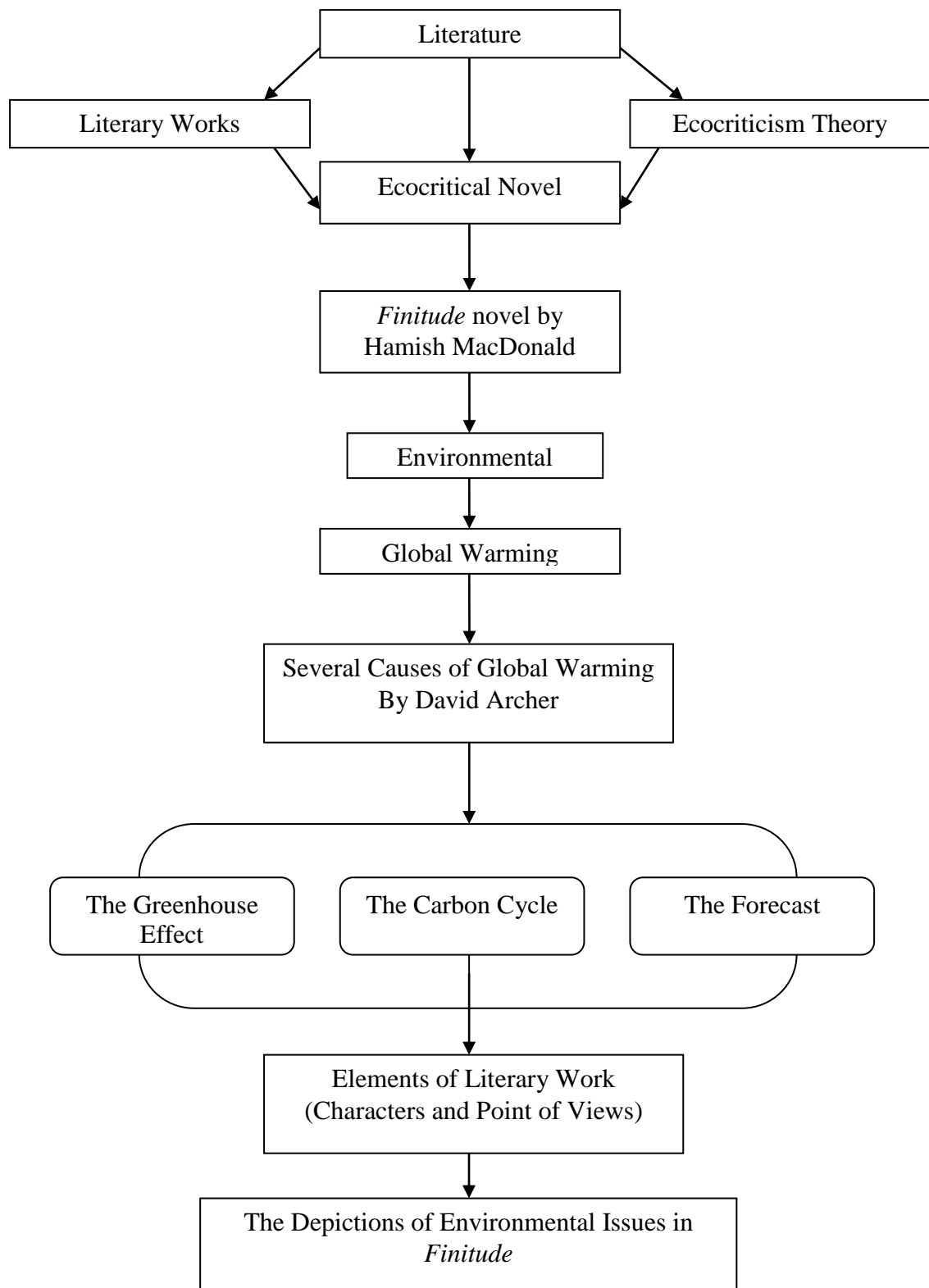


Figure 1.1: Conceptual Framework

CHAPTER III

RESEARCH METHOD

This chapter deals with the steps how this research was conducted. It begins with the discussion of the research design, followed by data type, data source, techniques of data collecting, technique of data analysis, and analytical construct.

A. The Research Design

This research is a descriptive qualitative research since it emphasizes on describing the phenomenon in its context by interpreting the data. According to Bodgan and Taylor (in Moleong, 2001:3), “A qualitative research is a research procedure which produces descriptive data; people own written and spoken words and observable behaviors.” The objects of this study are described in words instead of numbers and measures as in quantitative one. This study employed a content analysis technique in analyzing the data. Mayring (2000:5) in defining qualitative content analysis states that:

Qualitative content analysis defines itself within this framework as an approach of empirical, methodological controlled analysis of texts within their context of communication, following content analytical rules step by step model, without rush quantification

Content analysis emphasizes on the analysis of texts within their context communication. Content analysis provides media for the researcher to be the part of the texts. Its analysis becomes the bridge to understand the essence of the story and analyze some components which the researcher looked for. They included

data derived from various sources such as observation, documents, and notes in the forms of articles, journals or books.

In this research entitled “The Depictions of Environmental Issues in MacDonald’s *Finitude* (An Ecocritical Study)”, the researcher discovered the meaning embodied in the text. For example, the researcher collected any data related to Hamish Macdonald as the author of the novel *Finitude* and environmental issues, global warming, which can be categorized into several issues. Next, after categorizing into several issues the researcher tried to correlate and identify the ways they were depicted. The depictions used the literary elements as the stand point for revelation. Furthermore, it also dealt with data collected from ecocriticism theory. The novel was used to validate the analysis of the novel. These data were used to help the researcher analyzed the research.

B. The Data Type

The data in this research were words, clauses, phrases, sentences and discourses found in Macdonald’s novel entitled *Finitude*. The researcher tried to show to the readers about environmental issues and the ways they were depicted in the novel. The researcher interpreted and analyzed the data by employing relevant perspectives and theories.

C. The Data Source

The main source of this research was the novel *Finitude* which is published by the author, Hamish MacDonald, at 2010 in United Kingdom. Hamish MacDonald, the Canadian author of *Finitude* who is now based in Scotland, has

written a powerful novel that depicts people trying to survive in dystopian post-apocalypse times, and the book makes it clear that humans are very implicit in own human-made disasters.

He was able to portray his character, *Finitude*, from a fictional literary interpretation into the real example of a product of his environment remained in the collective imagination of literate humanity. The objectives of the research are to identify the environmental issues existing in the novel and to show the ways environmental issues are depicted in the novel.

The researcher also used some additional references as the supporting information in analyzing the data. To build a coherent background of the research, he read some books as listed on the reference pages which also facilitated him to analyze the research topic comprehensively.

The data of this research were also taken from the articles available on the websites in the internet. The data dealt with environmental issues existing in *Finitude* novel and also the ways environmental issues were depicted, for example some articles containing the background of the author Hamish MacDonald, some references correlated with literary elements, and the explanation about environmental issues in the novel. The objects of the analysis were words, phrases, clauses, and sentences expressed in the novel which were closely related to the issues of environment.

D. The Technique of Data Collection

1. The Research Instruments

The research instrument is a tool or facility used by the researcher in collecting the data (Arikunto, 2002). Therefore, in conducting the research, instrument was very important to get a better research finding. According to Moleong (2001), the researcher is the instrument in a qualitative research. In this study, the researcher himself used his capacity to interpret and analyze the data. The researcher as the first instrument, acted as the planner, data collector, analyst, and result reporter for his research finding.

2. The Research Procedure

Basically, the significant way to collect the data in this research was reading the novel comprehensively and making notes after that. The comprehensive reading of the novel more than once was done to obtain the detail information and the data relevant to the problem of the research.

The process of data collection technique consisted of five types, namely careful and comprehensive reading, note taking, data interpreting, describing and categorizing the data.

- a. In this research, firstly, the researcher read MacDonald's *Finitude* in order to understand the content of the texts.
- b. Secondly, the novel is re-read three times more carefully. Besides the activity reading of the novel, scrutinizing was also done towards the

extrinsic information concerning environmental issues and the depiction through literary elements.

- c. Thirdly, the researcher took notes on the detail issues to be analyzed. Another intensive reading was done along with the data interpretation.
- d. Fourthly, the data were described further.
- e. Finally, the data were categorized into the units in line with the topic of the discussion. This activity provided an in-depth understanding towards the text itself.

The data were arranged in tables. The tables were used to record all the data found by the researcher after conducting a series of comprehensive reading activity toward the novel. The data in the tables were interpreted and categorized in the data sheets.

Table 1.1 (Data Sheet)

a. The Greenhouse Effects

No	Page	Code	Quotation	Thematic Meaning/Category	The Depiction of Environmental Issues
1	7	A	I know what happened to the people on that	The Greenhouse	Point of View

			<p>ship,” she told him.</p> <p>“They passed through a patch of methane, likely released from clathrates—ice deep under the ocean it had been trapped in for millennia.</p>	<p>Effects</p> <p>(Greenhouse Gases)</p> <p>It shows the proof that methane had been trapped under the ocean for millions years ago,</p>	<p>Despendra’s point of view shows that one of the greenhouse gases had been trapped inside the Earth. She assumes this gas can release in certain time.</p>
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b. The Carbon Cycle

No	Page	Code	Quotation	Thematic Meaning/Category	The Depiction Through Literary Elements
2	4	B	<p>He placed candles around the room, and was happy with the effect. He’d managed to score these in the black market—things that released carbon needlessly through burning were not</p>	<p>The Carbon Cycle</p> <p>(Carbon on Earth)</p> <p>It shows how candle can actually contain carbon. The use of carbon on Earth is not allowed because</p>	<p>Character</p> <p>Jeremy is one of the two major characters in the story. He contributes to construct understanding towards phenomena which</p>

			allowed.	the effects of it can endanger people's life. Carbon on Earth is one gas which contributes to global warming.	happen in Earth. For instance, the use of an overwhelming carbon can cause natural disaster.
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c. The Forecast

No	Page	Code	Quotation	Thematic Meaning/Category	The Depiction Through Literary Elements
3	7	C	After all they'd been through, the hardships of rationing, the perpetual rain, the violent storms and disruptive floods, he supposed they had a right to celebrate. No one knew	The Forecast (Weather VS Climate) It shows how natural disasters had attacked their land. The perpetual rain,	Point of View Omniscient narrator shows that Jeremy has different perception about the phenomena happened on Earth although he understand that the disasters were off. He

			<p>what the hell the planet was up to, but most of the human beings on it were a lot better off than they were before modern life became so damned <i>efficient</i>.</p>	<p>storms and floods are the evidences of unusual forecast.</p>	<p>assumes that there will be dangerous disaster attacking the Earth.</p>
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Note: A. The Greenhouse Effect

 B. The Carbon Cycle

 C. The Forecast

E. The Technique of Data Analysis

Data analysis which includes gathering and linking the data to find particular phenomena is the important part of qualitative research (Given, 2008: 186). Data analysis is a process of organizing and classifying the data into a pattern, category and basic unit of analysis. In applying the data analysis technique, Creswell (2009: 185) mentions six steps namely organizing and preparing the data, reading through all the data, coding the data, giving a description, interrelating description and interpreting the meaning of description.

The six steps which were conducted to analyze the data are explained as follows:

1. Identifying the data from the novel by making some notes.
2. Reading and rereading the whole data and arranging the data into two major topics: the first analysis was the environmental issues (the greenhouse effects, carbon cycle, forecast) existing in *Finitude*. Second, it continued with the discussion about the ways environmental issues were depicted through literary elements in *Finitude*.
3. Coding and categorizing the data in the data table into thematic categories related to the environmental issues and the depiction existing in the novel.
4. Sorting the data by selecting the relevant data and excluding the irrelevant data. The classification and interpretation of the selected data were based on its thematic meaning and the depiction through literary elements.
5. Making the interrelation between the description of the data and the theory to derive the findings based on the objectives. The discussion was about the environmental issues existing in *Finitude* and the ways they are depicted in the novel.
6. The last one, making an interpretation of the findings based on the researcher's comprehension about the theory.

F. The Data Validity

According to Krippendorff (1981: 155), “validity designates that quality of research result which leads one to accept them as indisputable facts”. Regarding validity, Kirk and Miller (1986: 19) state that “validity is the extent to which it

gives the correct answer”. In other words, validity is a quality which makes a research accepted as a truth.

In qualitative research, validity is also commonly called trustworthiness. Trustworthiness can be derived when the data confirm four criteria, i.e, credibility, transferability, dependability and conformability (Moleong, 2001: 173).

After passing the process of data collection related to the research questions, the researcher applied an in-depth observation towards the data again in order to derive credibility, which is basically the concept of the internal validity that is the quality of validation (Moleong, 2001). The researcher read and scrutinized the text three times until he got the data saturation or he could not find any other significant variation of the data. As a result, the data were categorized to obtain the certainty by using the relevant theories and approach.

To examine the trustworthiness of the data, the researcher applied triangulation and discussion with his friends. According to Moleong (2001: 178), triangulation is a checking technique of the trustworthiness of the data using the other means outside the data to recheck or compare the data. Thus, the work of the researcher become more trustworthy. Triangulation is the way in achieving credibility.

To achieve the credibility of the data, the researcher did peer discussion with his colleagues in English Language and Literature Study Program, namely Lala Isna Hasni and Debbie Ratna Sari. The consideration of choosing those two peer viewers was appropriate since they have the same background in literature

concentration with the researcher. In addition, the data consultation was also done with the researcher's first and second consultants Dr. Widyastuti Purbani, M.A. and Niken Anggraeni, M. A., who are competent and expert in the literary study.

G. The Analytical Construct

The researcher needed to construct an analytical construct in order to help him analyze the data found in *Finitude*. After exploring the environmental issues and the depiction of them, the researcher formulated the data into three parts: category, indicators, and the depiction through literary elements. The definition of each category, its indicators, and the depictions were presented below:

Table 1.2 (Analytical Construct)

No	Category	Indicators	The Depiction Through Literary Elements
1	The Greenhouse Effect <ul style="list-style-type: none"> A process by which thermal radiation from a planetary surface is absorbed by 	There are several phenomena which become the main causes: <ol style="list-style-type: none"> The blackbody radiation 	The environmental issues will be depicted through literary elements. <ol style="list-style-type: none"> Characters Point of

	<p>atmospheric greenhouse gases, and is re-radiated in all directions. Since part of this re-radiation is back towards the surface and the lower atmosphere, it results in an elevation of the average surface temperature above what it would be in the absence of the gases.</p>	<p>b. The greenhouse gases</p> <p>c. Heat, winds, and currents</p>	views
2	<p>The Carbon Cycle</p> <ul style="list-style-type: none"> It is the process where the organic compounds in green plants do the photosynthesis 	<p>The causes of the carbon cycle:</p> <p>a. Carbon on Earth</p> <p>b. Fossil fuels and energy</p>	<p>The environmental issues will be depicted through literary elements.</p> <p>a. Characters</p> <p>b. Point of</p>

	<p>process and followed by respiration as a source of energy.</p> <p>The product of incorporate photosynthesis and carbondioxide will be released in the atmosphere through respiration process.</p> <p>Then, the product will be released back to environment as the energy for living things.</p>		views
3	<p>The Forecast</p> <ul style="list-style-type: none"> • The forecast refers to the term of climate change. Climate change is the 	<p>The indicators will be dealt with two phenomena:</p> <ul style="list-style-type: none"> a. Weather versus climate 	<p>The environmental issues will be depicted through literary elements.</p> <ul style="list-style-type: none"> a. Characters

	<p>further effect the increasing temperature of Earth. Normally it is usually called climate. When there is a change in the concentration of climate, it will lead to the climate change.</p>	<p>b. Forecasting climate change</p>	<p>b. Point of views</p>
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CHAPTER IV

FINDINGS AND DISCUSSION

This chapter presents the findings and discussion of the research. The chapter uses data to verify and clarify the discussion. The chapter focuses on the discussion of two points: the first is environmental issues existing in the novel, and the second is the ways environmental issues are depicted in the novel.

A. Environmental Issues Existing in *Finitude*

Glotfelty (1996: xviii) states that one of the various questions in ecocriticism is how nature is represented in a literary work. It means that a literary work can be media to make nature speak. Showing nature as a speaking subject becomes the task of ecocriticism. This case will be beneficial for readers to understand a certain phenomenon which happens on the Earth. It happens to be a crucial problem encountered by people in the world. This problem is global warming. Global warming becomes a popular environmental issue in today's life. Through this phenomenon people can understand that the world is suffering. Nature can feel and also has ability to speak. Then, the result will be the disaster itself, but there must be some signals which become a warning for everyone in this world. As knowledge gets improvement, people start to think that global warming cannot stand by itself. Therefore, there must be some phenomena which are accelerating it. These phenomena become the key point why global warming can happen.

According to Archer (2011), they are the greenhouse effect, carbon cycle and forecast.

1. The Greenhouse Effect

The greenhouse effect is one of the global warming causes. Since the evidence is found during the observations, people start to elicit an understanding what is meant by the greenhouse effect. Hammer said that the greenhouse effect is a process by which thermal radiation from a planetary surface is absorbed by atmospheric greenhouse gases, and is re-radiated in all directions (2001-90-91). This part can be assumed that the greenhouse effect does not merely rise alone. It must be followed by some phenomena. The existence of the greenhouse effect is caused by three phenomena (Archer, 2011). They are blackbody radiation, the greenhouse gases, and heat and winds. For that reason, here, the researcher will show the readers and give elaboration towards the greenhouse effect that exists in the novel.

a. Blackbody Radiation

This part of the research shows the readers about the first cause of the greenhouse effect. It is blackbody radiation. Blackbody radiation is closely related to energy which travels between the Sun and Earth through electromagnetic radiation, or light (Archer, 2011). This part of the story can be one of the evidences in what ways nature is suffering.

“Okay,” said the officer. “So, what do you make of it? You going to have to pay out?”

“Jeremy looked around the flat, but stopped in his tracks when he found the resident: flash-cooked in his recliner, hair burned away, pyjamas and housecoat melted to his body. Jeremy continued to the kitchen.”

(MacDonald, 2010:7)

The conversation above happens between Jeremy and the officer. Jeremy is the major character in the story. His action really determines the understanding of the greenhouse effects. Blackbody radiation exists because the energy travels between the Sun and the Earth through electromagnetic radiation. Here, it can be seen from the conversation that Jeremy can feel the heat energy as a result of blackbody radiation during conflagration. It can happen through conduction process between calorie and metal or other substances. It transfers the heat energy to many things. As a result, the things or the materials which exist surround the heat gets melt down. If the researcher can elaborate more, this blackbody radiation can be one of the causes why ice can melt in the polar. The radiation of the Sun can make ice of the polar vanish through blackbody radiation. Therefore, if it is not prevented, then the sea level will increase and tsunami will also happen.

Another example which shows blackbody radiation as one the causes of the greenhouse effect is presented below.

“Don’t sit there,” barked Lerrett. His head, like theirs, was bound in swaths of rough woven material and his eyes were shielded by yellow half--spheres.”

“But I can’t walk anymore,” protested Victor.

“That may be, but don’t sit there.”

“Why not?”

“If you sit on that rock, you will absorb its heat by conduction. The last thing you want is to get hotter. Sit on this,” he said, handing Victor a cooking pot.”

(MacDonald, 2010:48)

The conversation above happens between Lerret and Victor. It shows that the process of radiation can also be felt through a conduction process. The conduction

happens because the conductor catches heat from the sun and then it is saved in it. There are many kinds of conductors such as iron, metal, stone, sand, etc. Here, in this conversation Victor can feel the heat because he sits on a rock. Moreover, it can be seen from the conversation Lerret says that if Victor sits on the rock, he will absorb its heat by conduction. The last thing he wants is to get hotter. Therefore, it can be concluded that the stone is one of the blackbody radiation media because it can transfer heat energy from the Sun.

Furthermore, this novel also demonstrates how people can get dehydration and the further effects of blackbody radiation.

“I’m dying of thirst,” said Jeremy.

“No you’re not,” said one of the other Five Fingers. “I’ve seen men die of thirst.”

“Okay, I’m just saying that I can’t save my water any longer.”

“I didn’t tell you to save your water,” said the Finger. “It’s no good to you if you’re dead.”

“Oh, thank you!” said Jeremy, opening his canteen and guzzling.

“You must remember when we get back to the camp not to drink too much water. You’ll have been sweating all day, so there won’t be much salt left in your body. If you do drink too much you could go into hyponatremia.”

(MacDonald, 2010:48)

This part of the novel shows that people can get dehydration because of heat. Heat energy travels between the Sun and the Earth and this is one reason why people can feel heat. If it happens continuously, people’s body will lack of water and they get dehydration. In addition, it is also explained by Lerret that when Jeremy gets dehydration, he should not drink too much water after arriving to the camp in order not to get into hyponatremia. Craig (2013) states that hyponatremia is a condition that occurs when the level of sodium in your blood is abnormally low. It states further that “sodium is an electrolyte, and it helps regulate the

amount of water that is in and around your cells.” From the information, the researcher concludes that he will have been sweating all day, so there will not be much salt left in his body. Therefore, blackbody radiation does not merely make this world suffering, but it can also make people or humans who live in this Earth suffering.

Next, this novel also portrays negative impacts of advanced technology as the cause of blackbody radiation process.

“The Prime Minister orated at length before the crowd, talking about future visions, possibilities, and partnerships in terms he’d rehearsed the entire length of his journey here. He invited Fulo’s head of geoengineering to the platform to introduce the solar collector shield project in detail to the people assembled there, and those who watched at home as the proceedings were telecast around the world. The disc at the top of the building, he explained, was capable of capturing a previously unimaginable amount of energy as it was beamed down from the orbital collector. The top third of the pyramid stored the collected energy, and was connected to a grid that would allow them to sell it, at a reasonable price, to other sites around the world. The bottom two-thirds formed a completely self-sustaining habitat, with accommodation, shopping, and even a farm encircled by a forest grove.”

(MacDonald, 2010:99)

Advanced technology, indeed, helps humans in their daily life. For example, people get everything easier in their jobs and they can be finished faster. Unfortunately, people tend to be lazy because they really depend on the technology. For that reason, the advancement of technology which is considered good for humans is still doubted. This can be seen, here, in this novel that people tend to think and develop technology rather than thinking about their surroundings firstly. Otherwise, the Earth where they live in is extremely significant to their life. *Fulo* can be the evidence of advanced technology developed by government which is considered as a threat of humans’ life. *Fulo*, here, in this novel is a kind

of project which uses a solar collector to block the Sun. It is created and developed to prevent the Sun light towards the Earth, especially in poles. However, the government does not realize the further impacts of *Fulo* itself. *Fulo*, as mentioned above, uses a solar collector, but its function to block the Sun produces heat radiation to the surroundings. The researcher gets information about the location of *Fulo*'s project and the name of the location is "Iktyvault." It can be derived from the novel that Iktyvault is the coldest place. Thus, the researcher can imagine how dangerous *Fulo* is. If *Fulo* can produce heat radiation because it blocks the Sun, this can be ascertained that the surroundings will melt and the further impact is the increase of the sea level.

Furthermore, technology cannot exist without nature which supports its life. As a contrast, people can still live without technology in the past time. Nevertheless, people in today's life cannot deny the fact that they really need technology. Therefore, people must think wisely to use and operate it because sometimes it can endanger people's world.

b. The greenhouse gases

The second part of the research discusses about the greenhouse gases which obviously exist in today's life. Archer (2011) states that the greenhouse gases (GHGs) are tracing atmospheric gases that trap heat in the lower atmosphere, causing global warming. He explains further that the greenhouse gases variable components include carbon dioxide (CO₂), water vapor (H₂O), methane (CH₄), sulfur dioxide (SO₂), ozone (O₃), and nitrous oxide (N₂O). The researcher finds

that the greenhouse gases become a dominant environmental issue in the novel.

This part of the story shows that the Earth traps certain gases.

“I know what happened to the people on that ship,” she told him. “They passed through a patch of methane, likely released from clathrates—ice deep under the ocean it had been trapped in for millennia.”

(MacDonald, 2010:4)

The conversation above happens between Despendra and Jeremy. Despendra explains about the fact that methane has been trapped under the ocean for millennia. This can be concluded that the Earth contains much methane which can release anytime and methane is categorized as one of the greenhouse gases. Therefore, this conversation becomes evidence that the greenhouse gases can release at the unpredicted time and they can contribute to the deployment of the greenhouse effects.

The greenhouse gases become the main cause of the greenhouse effect. The theme of the greenhouse gases is obvious in this part of the story.

The two of them stood, cocking their heads back and forth, regarding the thing, which lay there like a fallen balloon dinosaur.

“That’s not going to fit in the elevator,” said Victor. He shook his head. “Sorry, of course the power’s out. And the stairwell’s even smaller. There’s no way we can get it in there.”

“No kidding.”

“Unless we deflate it.”

Jeremy leaned over and picked up a red plastic triangle. “There was only one CO₂ cartridge with it.”

“Right, and we wouldn’t want to let out the carbon dioxide, because that would be bad for the environment.”

(MacDonald, 2010:21)

The conversation above happens between Jeremy and Victor is quoted by the researcher in a purpose. He wants to show that they are very close each other and dominant characters in this story. The researcher infers from the conversation that

actually some people start having awareness towards environment although they still do not realize that some stuff contain bad substances. It is explained that Jeremy picks up a red plastic triangle. Many people have already understood that plastic is not good for the environment because some of them cannot be recycled. Then, there will be too much garbage which can pollute humans' nature. Unfortunately, carbon dioxide is categorized as the greenhouse gases which make the Earth get warmer. Moreover, Jeremy also finds that the red plastic triangle contains CO₂ and this will be a problem. However, Victor tries to remind the readers through this story that they cannot let out the carbon dioxide because that would be bad for the environment. Therefore, it seems quite contradictory when people have realized that plastic contains carbon dioxide, but they still use them. In addition, people have to realize that if there are too much carbon dioxide, humans will die and of course global warming will happen quickly.

This part of the story brings the readers to a very crucial thought that humans should be wise in taking a choice which relates to this world. If they cannot manage and maintain what they use, then disaster will happen. It is indeed true that they use plastic to make the balloon fly, but they also remind humans that carbon dioxide is indeed dangerous for them.

Furthermore, it is also told in the story that animals are considered as one of the carbon dioxide producers.

“What is this I hear about you not eating meat?”

“Oh, well, I choose not to.”

“I think you are a coward.”

“What? Why? Because I don't want to waste those resources? Because I don't want to murder other living things when there's no need to?”

“No, because you refuse to take responsibility for your life. As a living thing, you devour, you consume. Life can’t be saved or... *deferred*. Who are you saving it for? This is why your ‘Effort’ was bound to fail from the start. If no one is going to live the life that is saved, then it is no life at all.”

(MacDonald, 2010:52-53)

This part of this story is very interesting because the debate happens between Victor and Tydial Lupercus. Tydial is a commander of a community which is against the government. This community does not agree with the government’s policy depending on technology and ignoring nature. Here, Victor is asked by Tydial about his habit as a vegetarian. Victor answers by giving a good argument that he does not want to waste those resources and murder other living things. The researcher agrees with Victor’s way of thinking that people cannot murder living things. This part also makes the researcher remember crucial information stating that becoming a vegetarian is one of the best ways to prevent global warming. A research shows that animals are also the main producers of carbon dioxide besides humans’ activities and factories. Therefore, the researcher thinks that probably Victor has the same assumption. If the thing is different from what he assumes, at least through his thought he reminds humans that animals also contribute to the global warming.

Nevertheless, the readers cannot jump directly to the conclusion above without paying attention to Tydial Lupercus’ argument.

“Victor shook his head. Something about Tydial’s words—or the pod in his mouth—was having an effect on him. He felt blurry, happy.”

“But... No...” he said, confused. “We *are* life. We are nature.”

“No, my friend,” said Tydial, “we stand *apart* from nature. She gives things to us, and we must take them with gratitude. But now we’ve taken too much from her with no gratitude, and we killed her. We have killed the gods’ youngest daughter, and we are now responsible for taking her place. Except we are pathetic gods.” He pointed to a small black insect crawling across the

dirt floor. "I'm powerful enough to destroy that bug a thousand times over, but damned if I could make one."

Victor nodded.

"Perhaps a god has returned to take her sister's place. From what I've seen, she is an angry bitch." He poured more water on the rocks. "Your Hardwick may be a good politician. But he is no god."

(MacDonald, 2010:53)

Tydial argues that Victor's argument is not totally correct. He considers Victor as a coward because Victor refuses to take responsibility for his life. As living things, people consume and devour. However, life needs to be saved and that is why there must be someone who lives to respect a life. When there is no one who lives, there will be no life at all. The researcher also agrees with this argument and he thinks that this is what humans usually do when they are busy with their thought about environment. They tend to forget that they must live for a life. Furthermore, Victor gives more important argument that humans are life and they are nature. Tydial rebuts that it is not true because humans stand apart from nature. Nature gives everything for humans to support their life and they must take with gratitude. Unfortunately, it is contradictory with the fact that humans have taken too much and they are very greedy. Lupercus considers that humans have killed *the gods' youngest daughter* and they must be responsible for that. Then, the researcher starts thinking that it is a very important point of a long debate between Victor and Tydial. He considers them as wise men and they have their own opinion. However, the readers must think wisely and carefully that Tydial's words are indeed considerably reminder for humans. This story is a reflection to phenomena which happen in today's life.

In addition, Tydial also mentions Hardwick as a closing of his argument. Hardwick is a prime minister who takes any decision for people's destiny and it includes *Fulo's* project. The researcher is interested in the last part of Tydial's argument. He reminds humans that they are powerful creatures. He describes himself that he can destroy a small black insect quickly, but he does not want to do that. Then, it is also the same as what *God* has done. Probably, God is angry with all of people because of their greed in exploring nature. It is further told that God can pour more water on the rocks. Hardwick is maybe a good politician, but he is not God. For that reason, the researcher considers that this part of the story becomes one of the answers why disasters always happen in this world. God maybe gets angry with humans' immoral attitudes. People are arrogant, conceited, and they forget that they are just merely creatures who should be wise and responsible for their world. Next, if humans' ways of thinking are always the same as this story, there will be more disasters that happen. Therefore, the researcher concludes that humans should be responsible for maintaining what God gives to them and also have awareness that they are nothing in front of God.

c. Heat and Wind

The third cause of the greenhouse effect is heat and wind. Heat and wind are commonly known to people in the world. Unfortunately, many people still do not realize that this common phenomenon endanger their life and become one of the global warming causes. According to Dutch (2010:845), heat is the energy needed to raise its temperature one degree Celsius, while wind is caused by the uneven

solar heating of the Earth's surface, which creates areas of high and low atmospheric pressure. Further, he explains that the significance of this topic to global warming is energy sources which can include incoming solar radiation, energy trapped by greenhouse gases, waste energy from machines or industrial processes, and so forth.

For that reason, the explanation above brings the researcher to the assumption that heat and winds truly contribute to the global warming. This assumption is supported by this part of the novel.

“I’ve had girls say they wished I was dead before, but this is a new one for me,” he said,
 leaving the kitchen and plopping himself on the couch beside Jeremy. “Did Des say anything about where might be safe?”
 Jeremy shook his head.
 “Well, it’s *heat*, isn’t it? That’s what’s causing all this. So where’s the coldest place on the planet?”
 Jeremy answered like a schoolboy. “Iktyault.”

(MacDonald, 2010:17)

The conversation above happens between Jeremy and Victor. They try to find a solution on how to escape from the disaster. It happens because there is an increase of the sea level which makes many cities sink into the water. Victor thinks that heat is a major cause of this disaster. Heat makes ice get melt and if it happens continuously, there will be more water rises. Heat attacks coast area which is undeniably close to water. Thus, when heat melts the ice in the polar, coast area becomes the first area which gets disaster. Moreover, heat becomes a big problem in the story. Besides having the effect on an increase of the sea level, it also destructs humans’ environment. Therefore, Victor purposely solves this problem by giving solution to go to the coldest place. He thinks that Iktyault will

be the safe one to protect Jeremy's family although this place will be the most dangerous place in the end of the story.

Furthermore, it is also told in the story about the negative impacts of the heat.

Victor and Jeremy encounter a problem resulted from heat.

"Jeremy!" called Victor's voice.

He ran through to the other flat. Victor pointed out his wall of windows.

"Where's the water?" asked Jeremy.

"Way out there." The tide was unnaturally far out, exposing tracts of mud and stranding boats.

(MacDonald, 2010:21)

The conversation above shows the readers that heat also contributes to a cause of drought. Drought becomes a crucial issue in this story because many people cannot find water at all. Jeremy's speech can be the indicator that the water is way out there. Thus, it describes the readers that heat which engulfs a part of the world causes drought. Moreover, this part of the story gives the readers a tragic comparison to the previous discussion that a certain place of the story gets more water, but other places get drought. This case is quite contradictory because both of them have the same main cause, and it is heat. Therefore, the researcher argues that heat naturally leads to negative impacts. It is either bringing more water or depleting water supply. It brings more water because the ice gets melt and there is an increase of the sea level. On the other hand, the remote area which is far from water supply becomes the first victim of heat. This area gets lack of water and it causes drought which can indirectly endanger humans' life

Last but not least, this part of the story shows the readers about the effect caused by wind.

“Only a day away from the Coast?” remarked Jeremy. “Hm. Maybe it’s the elevation, or the wind patterns or something.” He sat on the ground, then lay back, watching clouds cross the opening in the trees.”

(MacDonald, 2010:29)

Jeremy’s speech gives the readers information about the effect caused by wind. Wind is indeed beneficial for people because air circulation happens. Unfortunately, this part of the story shows that it is different. The difference lies on the result made by wind. It is told that the wind opens the trees, so this can be inferred that the wind makes the trees fall down. The wind produces an overflow kinetic energy and this can be ascertained that it easily crushes the trees. The fall down notifies the readers that there must be more impacts which follow it. That is oxygen supply and binding of carbon dioxide in atmosphere. Trees or forest are generally important for humans because it becomes a producer of oxygen. Then, humans should imagine what will happen if too many trees fall down. The atmosphere will be contaminated by carbon dioxide and it extremely endangers humans’ life.

Moreover, *Finitude* shows that there is an extreme disaster caused by heat and wind.

Jeremy lifted his head. He smelled something pleasant, something he’d just smelled recently.

He raised his nose toward Victor, who took the cue and sniffed the air. He smelled it, too.

Wood smoke.

A plume of grey--white rose from the woods on the far side of town. A hot wind pushed around them.

(MacDonald, 2010:31)

Heat and wind are definitely different matters. Then, humans can imagine what will happen if they are blended up. The answer lies on the story above that

Jeremy and Victor smell something pleasant. The cause of the smell is wood smoke and it indicates that there is a cause of wood smoke because it cannot happen spontaneously. The researcher assumes that the cause is a conflagration of the forest. This case also makes Jeremy and Victor feel hot wind pushing around them. Therefore, this part becomes the answer on what will happen if heat and wind are blended up. Conflagration usually happens because heat and wind are blended up. Such a phenomenon creates wood smoke and hot wind. Then, if this event happens continuously, people can imagine how many carbon dioxide is released to the atmosphere. Thus, it brings the researcher to the conclusion that heat and wind indeed contribute to the greenhouse effect.

2. The Carbon Cycle

The carbon cycle is the second cause of the global warming and it is considered as the most dangerous cause by many people. Since there is no exact definition about what carbon cycle is, the researcher tries to conclude by himself that carbon cycle is the process where the organic compounds in green plants do the photosynthesis process and are followed by respiration as a source of energy. This conclusion is based on what Archer (2011) and Dutch (2010) try to explain. They have the similar thought about two processes happening during carbon cycle. They are photosynthesis and respiration process.

The carbon cycle has the same root as the greenhouse effect that it cannot merely raise alone. There are two causes of the carbon cycle and they are carbon on Earth and fossil fuels and energy. These two causes are presented as follows.

a. Carbon on Earth

Archer (2011) argues that carbon exists in a range of oxidation states and chemical forms. He explains that carbon is most stable in the oxidized form on Earth mostly as CO₂ (carbon dioxide) and CaCO₃ (calcium carbonate). Therefore, this part of the research deals with carbon dioxide, calcium carbonate, source of carbon, and where carbon can be found.

In this part of the story, a unique natural phenomenon appears as a result of carbon burning.

He looked up through the orange smog at the sun. A huge ring of light surrounded the faint disc in the sky—a “sundog”, they’d come to be called. *All that carbon on Earth—just stored--up light*, he thought. *We’ve burned up too much of our light.*

(MacDonald, 2010:7)

This novel provides more information and knowledge about a natural phenomenon that happens in today’s life. Jeremy sees a “sundog” which is usually known as a huge ring of light surrounded by the faint disc in the sky. It can be inferred from Jeremy that sundog is formed by an overwhelming carbon burning. The more sundog appears the more carbon burns. Then, it can be ascertained that the atmosphere will be polluted.

This novel also tells the readers that carbon plays important roles to the economy sector.

“Well, maybe I should go somewhere else!”

The grocer smiled. They both knew it was an empty threat: he was obliged to register with a local grocery store in order to receive his carbon rations, and he’d already signed on here.

(MacDonald, 2010:8)

The quotation above is appeared during the conversation happens between Jeremy and the grocer in the market. This part shows the readers about the importance of carbon in economy sector. The researcher thinks that it is very interesting because carbon becomes a tool of marketing instead of money. That is why, all economic activities in this novel uses carbon. Then, the researcher can imagine how much carbon is released in the atmosphere every second. It also shows the readers that people in the story really depend on carbon and it is used in many parts of daily activities. Thus, the researcher thinks that the use of carbon in this story has positive and negative impacts, but the negative impact is not obvious. That is about awareness towards environment.

Carbons on Earth and in the atmosphere sometimes do not exist naturally. There are some factors which become a cause of it.

“I’m an ethical travel consultant. When I can, I talk people into exploring the place where they live, but if they’re insistent on going somewhere else, I try to find a way for them to do it that’ll do the least damage, and maybe even help someone.” He dropped his long frame into a puffy fabric couch. “It’s all about what kind of effect your passing through the world is going to have, isn’t it?”

(MacDonald, 2010:9)

In the conversation above Jeremy and Victor discusses about factory. Today, people cannot deny the fact that industrial sectors play important roles in economy sector. That is why; all countries in the world try to compete to develop the industrial sectors. However, Jeremy and Victor do not totally agree that the industry is beneficial for humans’ life. They think that the industry brings negative effects rather than positive effects. The researcher tries to elaborate that

the industry especially the one which releases smoke can be ascertained as a dangerous problem. Factories or industry indeed release carbon dioxide to the atmosphere. Then, oxygen supply decreases and it harms all living things in the world. Therefore, the researcher thinks that industry is definitely important for economy's power. Nevertheless, this power will be useless if there are no healthy places. Humans must be wise to maintain this world because they do not live alone. Respect to the nature is needed due to the fact that nature gives everything to humans.

The effects of carbon endanger all living things including animals. In this story, animal can be considered as the first victim of carbon dioxide contamination.

"It's over this way," said Jeremy, leading him away from the main thoroughfare of the sand wasted town. They reached a far edge where the city opened on the desert. "Look," said Jeremy.

Victor saw animals tethered to blocks and held in makeshift pens. "What? It's cows and goats. We know they eat them."

"It's not that," Jeremy said, "look closer." They approached some of the animals, who sniffed at the air, but their eyes were smoky and sightless. "They're all *blind*. And it gets worse," he said.

Jeremy led him further out of the city, where some rough structures were erected in the sand.

One was like a large, spoked metal wheel on its side.

(MacDonald, 2010:54)

The sentences above is quoted from the conversation happens between Jeremy and Victor. They discuss about a peculiarity of animals. They find that the animals' cattle by Mondolan are blind. Mondolan is a community against the government's policy and they really respect nature. Next, Jeremy and Victor try to examine and observe what actually happens to the animals. Finally, they realize

that the contamination of air is the thing which becomes a problem. They find that the pens where cows and goats live are contaminated by metal. The metal evaporates and releases carbon. Then, this makes animals blind and also breathes toxic gas from the air. Therefore, the researcher believes that carbon's contamination does not merely come from factories or vehicles, but it also comes from a tool made of metal. Wise maintenance towards metal is needed in order to avoid a rust of it.

Moreover, it is also described in the story about the process of island formation made from plastic.

“Ow!” yelled Victor. Des rubbed her shoulder, and Jeremy ran to the front. He squinted into the morning sun and the pink sky around it. Beneath it, as far as he could see from left to right, was... *something*. But not land.

“Plastic,” said Des, leaning over the railing beside him.

“I’ve heard of this,” said Victor, “but I didn’t think it was real.”

“What is it?” asked Jeremy.

“A vortex where the plastic that’s been dumped into the ocean collects.”

“How big is it?”

“*Big*. Big like a province.”

(MacDonald, 2010:69)

The event above happens after Jeremy, Victor, and Despendra wake up during the journey to Iktyault. They find that their ships cannot pass the ocean because there is a vortex which is full of plastic. The researcher gets the information that the pile of plastics is very big and it is like a province. He tries to imagine how much carbon releases from plastic to the air. It is indeed true that a massive of plastic also produces a massiveness of carbon. Furthermore, as the readers generally know that plastic cannot be digested in a very short time. It needs many years to be digested or vanished. Unfortunately, humans cannot deny

the truth that plastic usage is very demanding. People seem unable to live without plastic and they use it everywhere. For that reason, the researcher's assumption that carbon dioxide or carbon's contamination cannot be removed is true. The fact in the story reflects the reality of today's life. In addition, this can also be inferred that the plastic usage starts to contaminate water as a source of life. Then, the life of all living things is endangered.

Wise usage and a choice of plastic which can be recycled play important roles of reducing carbon dioxide emission. Nevertheless, it will be useless if people still do not have awareness related to this case.

Moreover, it is also explained further that the existence of whales in the ocean starts going to the extinction.

The running shoes led him to a shore of undulating purple plastic. He picked his way to the water's edge and splashed the sweat from his face and arms, then slicked some over his legs. As he cupped his hands, he looked closer at one of the purple shapes: it was a charity collection cup that said "Save the Whales".

(MacDonald, 2010:71)

The part of the story above is the further impact caused by a massive of plastic which forms a province. It proves the readers that the plastic usage has contaminated the ocean. The carbon released by plastic jeopardizes the life of living things. Then, Jeremy finds the evidence that the existence of whales is vanished due to the fact that high intensity of plastic usage contaminates their territory. Thus, the researcher concludes that the plastic usage which can release carbon dioxide brings more negative impacts not only for future's life, but also for today's life.

b. Fossil fuels and energy

Fossil fuels and energy can be considered as the most important matters for humans. Humans seem unable to live without them because humans really depend on their vehicles, technology, and also industry. Then, most of the humans' activities use fossil fuels and energy as a source of life. According to Archer (2011), fossil fuels are any combustible deposit of carbon of biological origin created over millions of years of geologic history. He explains further that fossil fuels store the chemical energy created over hundreds of millions of years as accumulated layers of plant and animal remains were subjected to heat and pressure. Then, these organic residues transformed into coal beds, pools of oil, and pockets of gas. They include coal, oil, natural gas, oil shale, and tar sands. Since these fuels are no longer being created, they are nonrenewable resources. For that reason, the researcher assumes that people cannot live without fossil fuels and energy because they really support humans' life. Unfortunately, humans tend to forget to preserve them. They just dig, get, and use them without thinking about the further impact which follows these actions.

The researcher's statement is also supported by this novel which shows humans' greed in exploring nature.

“Despite his cartoon--cat appearance, Victor assumed a professorial pose. “Misrule honours the shadow side of our lives. Life exists because of death. All the fuel our society was built on—it was the trawled-up remains of things that lived before us. Isn't it ironic that dead dinosaurs were ultimately the means we used to drive ourselves to extinction? All the things we take from the ground—gold, diamonds, coal, petroleum, radioactive rocks—they all corrupt everything they touch. Misrule is the night of shadows, a time for letting out a little chaos in the hopes that it will help us maintain control over the light world we've built on top of a graveyard.” (MacDonald, 2010:9-10)

This part of the story indeed reflects to reality of today's life. It shows that humans depend very much on fossil fuels and energy. They use these things for industries, vehicles, and many other advanced technology. It is mentioned clearly that humans have taken many things from the ground such as gold, diamonds, coal, etc. It proves the readers how greedy humans are. They abandon the duty as protectors of the Earth. Then, all the fossil fuels and energy which are collected through mine's activity usually make environment get damage. The land explored will be destructed and water is usually contaminated by carbon. As a contrast, humans tend to use economy reason to make an excuse for what they have done. Nevertheless, humans are still not allowed to explore and take everything without a good maintenance. Then, the researcher can imagine the effects from the mine's activity done by humans. How much carbon dioxide released to the atmosphere as a result of humans' greed.

Fossil fuels and energy are formed through many years process of vanishing dead creatures.

“Jeremy secured the wheel and throttle and went back to look. Victor pulled the line in hand over hand, but it soon became apparent that the mass on the end wasn't a fish. Des and Jeremy made disgusted noises as Victor hauled the whitish thing on-board. “I need the lure back,” he explained as he dropped the dead creature on the deck and picked at it. It had once been a large sea bird, but its insides were exposed, bursting with fishing line and bits of plastic in a dozen colours. Victor worked as quickly as possible then hurled it back overboard.

“I don't understand,” said Des, “we're in the middle of the ocean. There should be all kinds of fish here.”

(MacDonald, 2010:68)

There are many sea birds which die in the ocean because of the contamination of plastic. The carbon is released and the sea birds breathe the air. This is very

tragic when humans' activities have resulted in big disaster for all the living things. Nevertheless, what makes this part of the story interesting is humans tend to forget the impacts caused by them. This part reminds the readers that fossil fuels will be formed. It has been explained by Archer (2011) that fossil fuels can be obtained through the process of sedimentation of the dead creatures. Therefore, the researcher concludes that the plastic usage has already contaminated the ocean and air. Then, fossil fuels formed by dead creatures will result on more contamination and release more carbon. These impacts indeed endanger all the living things on Earth.

It is also described further that other animals become the victim of carbon's contamination.

Later in the afternoon, he found a huge tortoise shell. The creature's skeleton was still inside; Jeremy presumed it died here, finding nothing edible around for miles, or because it ate something plastic that looked like whatever tortoises ate. He wished he could take the shell with him. *What do I need with an oversized tortoise shell right now? That would be useless.*

Useless.

In life, the tortoise would have been useless to him, too. The thought struck him as sad, because its shell alone was magnificent. Surely the creature had lived a hundred years or even two-long before men had taken its ancestors' oily remains from the ground and turned them into these plastics.

(MacDonald, 2010:71)

The event above is ironic because humans' negative attitudes make the other living things die. After having discussion on the death of sea birds before this conversation above, tortoise becomes the next victims of humans' negative attitudes. It clearly describes that tortoise had lived a hundred years or even two-long before men had taken its ancestors. Thus, the readers can predict that it is a rare animal which should be preserved. Unfortunately, it dies because humans

murder it. The tortoise dies because it eats plastic and there is no food that can be eaten except plastic. Thus, the researcher thinks that this phenomenon does not happen naturally. Humans as the first level of food chain become the main cause of it. Probably, people in the story do not realize that the effect of the plastic usage will be on the death of the animals. Both of these tragedies should open people's eyes because carbon produced by them will also endanger people's life. Thus, humans should be responsible for this case and have more awareness on the deeds done by them.

Another example of the negative effects of burning fossil fuels is presented below.

Whatever damage had been done to the chemical works in his head by those events, keeping him stuck in depression, it was repaired now. This felt better than the numb nothing that drugs had given him... even though back then everything was safe and now nothing was.

He bounced in his new shoes across the factory floor, back to his hammock. He took them off, placed them carefully to one side, crawled into bed, and slept soundly.

(MacDonald, 2010:77)

This part of the story above shows the readers that humans cannot avoid using chemical substances. People usually use it in order to make their work better and it is told that people use it in factory. Thus, it reminds the researcher about the product of fossil fuels. Chemical energy is considered as the product of fossil fuels. Then, it can be ascertained that it contributes to the carbon's contamination and also carbon cycle.

3. The Forecast

The term forecast is closely related to the climate change. Thus, understanding the forecast cannot leave a root of two basic knowledge. They are the difference between weather and climate, and the forecasting climate change. The researcher tries to distinguish between weather and climate, and also the forecasting climate based on Archer's explanation about them.

Archer (2011) explains that Weather is the physical condition or state of the atmosphere at any given time. Thus, the researcher assumes that weather of any place is the sum total of its temperature, pressure, winds, moisture, and precipitation conditions for a short period of a day or a week. On the other hand, Archer states further that climate is an aggregation of near-surface atmospheric conditions and weather phenomena over an extended period in a given area.

Furthermore, the forecasting climate should be known as an analogy between the forecast to the global warming itself. The forecast refers to the term of climate change, as people know that climate change is the further effect of the increasing temperature of Earth. The impacts will be melting of glaciers, hot weather, and so on. When there is a change in the concentration of climate, it will lead to the climate change.

a. Weather versus Climate

As the researcher has explained before that weather and climate is the basic component of global warming. There are various effects of it and these effects

sometimes endanger people's life. This part of the story discusses about the impacts of weather and climate in humans' life.

An enormous throng amassed at the waterfront. Jeremy figured it must be half the city or more. After all they'd been through, the hardships of rationing, the perpetual rain, the violent storms and disruptive floods, he supposed they had a right to celebrate. No one knew what the hell the planet was up to, but most of the human beings on it were a lot better off than they were before modern life became so damned *efficient*.

(MacDonald, 2010:1)

The part of the story above shows the readers about the danger of weather and climate. It is clearly shown that the bad impacts are resulted from weather and climate. The impacts are the hardships of rationing, the perpetual rain, the violent storms, and disruptive floods. All the disasters above are mainly caused by an extreme weather or climate. Jeremy tries to figure out that these phenomena happen because of humans' attitude. He said that the human beings on it were a lot better off than they were before modern life. It can be inferred that he recognizes that the life in the past time is better than this modern time due to the fact that people tend to be busy with their business rather than preserving nature. Thus, these phenomena make this world no longer a safe place to live.

This part of the story shows the readers that there is another example of the negative impact of extreme weather and climate which also happens in this recent year.

"Who's throwing them?" asked Jeremy, looking around, angry now. As he turned his face toward the wind, something hit it with a splat. "What the—?" A tiny, wet thing tumbled down the front of his suit and he caught it. "A frog? Who the hell throws frogs at a wedding?"

Seeds, insects, fish, and other small creatures started raining down on the crowd. As they ran for the tent, Jeremy yelled to Des, “What’s going on?”

Panting and wide-eyed, she looked at them.

“What is it?” asked Victor, reaching for her hand.

“The jetstream—something’s happening to it,” she said.

“Jetstream?” asked Jeremy.

“It’s like a river of wind that circulates around the globe up near the stratosphere. Sometimes things get sucked in—”

(MacDonald, 2010:14)

The phenomenon in the story above also happens in the reality in this recent year. Jeremy feels that there is a peculiarity that happens to him. He feels that there is someone who throws something to him and he gets angry. However, he and many people in the party are surprised by frogs, seeds, fish, etc. Animals come down from the sky and for him, it is impossible. Then, Despendra says that it is jetstream and it happens because there is unstable weather and climate. It is also told, here, that jetstream is like a river of wind that circulates around the globe up near the stratosphere. From Des’ explanation, the researcher can get an understanding there will be many phenomena which can happen because of extreme weather and climate. Thus, this makes him aware that if extreme weather or climate happens continuously, more extreme phenomena will also happen in this world.

Another bad effect resulted from the extreme weather and climate is presented below.

“The Effort had been reinstated with more restrictions than ever before. Jeremy pushed his way through the crowd on the street. Every other person had their thumb pressed to their ear, talking away, trying to get more information because the news programmes were obviously holding back. Winds were coming in from offshore, strong enough sometimes to break

windows, knock people over, and flip objects into the air, turning them into projectiles.”

(MacDonald, 2010:16)

It can be inferred from the story above that many disasters are coming. It shows the process of how natural disasters start to engulf people's environment. It also tells the readers about how dangerous they are. They can destroy environment and everything. Thus, the researcher thinks that these disasters above have happened in the real life. Unfortunately, some people still do not realize that the phenomena that happen are caused by them. Then, preventive action should be done and the first action needed is people's awareness.

In response to an argument above, the story which will be presented below is against the argument.

Yes, Hardwick admitted to one of the paper's journalists, something had gone wrong. The climate had tipped, unforeseen, into a dangerous new state. But *he was going to fix it*. According to Hardwick, *Fulo*, the company he ran before entering into politics, had developed a technology that could reverse the trend and fix the planet. “For some time,” said Hardwick in the article, *Fulo* has been providing energy to meet many of the country's needs. But this whole while, *Fulo* has also been conducting research and development into the crucial new science of geoengineering. This project has delivered what may prove to be the most important breakthrough in human history.

(MacDonald, 2010:16)

This part above shows that the researcher's argument about people's awareness is debated. Hardwick as the prime minister has taken decision that his *Fulo's* project can solve this climate change problem. Then, it shows the readers that politics can get into nature and this is what usually the researcher thinks as politization over nature. The researcher thinks that government's effort which tries to solve the climate problem is good. Unfortunately, what makes it improper

is there is purposive actions behind the effort. It is told in the story that Hardwick wants to get vote for the next election. Moreover, *Fulo*'s project does not examine further about the effects which will be resulted to the environment. In the end of the story, *Fulo* itself becomes the destructor of humans' environment. Last but not least, the government's proper action which should be done first is the people's awareness. If humans as rulers of the Earth still do not have awareness to protect nature, whatever efforts done by the government will be nothing and useless.

b. Forecasting climate change

Forecasting climate change is the second important topic which contributes to the global warming problem. It is important for the readers to understand the kinds of events or actions related to forecasting climate change in order to raise awareness of nature's preservation.

The part of the story below will show the readers that global problem about nature starts from a simple problem.

Jeremy had a personal stake in the voyage, since he'd sold insurance to several of the travellers. The large global firm that provided all his policies had also insured the ship against Acts of God and "Acts of Man"— a new distinction developed since "natural" disasters started overstepping the known bounds of nature on a regular basis thanks to the side--effects of humanity's progress.

(MacDonald, 2010:2)

That global problem about nature starts from a simple problem is shown above. This can be inferred from the part of the story above that politization over nature happens again. What is meant by forecasting climate change in this context is a warning for people in the world that something bad related to the natural

phenomenon will happen in this world. It happens in the story that government's power has ruined a nature's ecosystem. It shows that some stake holders give permission to certain global firm for nature's exploitation. Natural disasters, here, refer to the case of climate change. It usually relates to the opening forest illegally. Forest which plays important roles to provide oxygen, retain and save water during hard rain is cut down. Then, floods and other disasters happen continuously. The victims who cannot be denied are humans. Thus, the government must have wise decision and good vision.

Forecasting climate change can be beneficial warning for people to make a preparation of something bad.

I'm fine, Ma'am. I just—I had to tell you. It's not safe for you to stay here. Something terrible is going to happen soon."

She laughed. "You're saying this like it's news."

Jeremy looked perplexed. "Well, it *is* news. It's *all* the news. There are extreme weather-forms gathering off the coast, the jetstream has gone crazy, the—"

"Jeremy, Jeremy. Easy, son. This has been a long time coming."

"But The Effort, all the changes we made..."

"We didn't change, Jeremy, we *substituted*. Our fundamental relationship to the world didn't change. It's a system and we're part of it. Now it's going to change, and we may or may not be part of its future. I know this. Everyone knew this.

(MacDonald, 2010:18)

That forecasting can be media to inform people about natural phenomenon is shown above. It is clearly described that Jeremy tries to inform his relative about extreme phenomenon which will attack their environment. Unfortunately, the news which is delivered does not make his relative aware. It happens because his relative really depends and trusts the government's effort to solve the problem. This case is indeed a reflection for the readers and people that they just depend on

the government. They think that it is merely duties of government to carry on. However, people should remember that it is a global problem and they will also be the victims. Tragically, when everybody really depends on the government, the government does not take any serious actions. The government believes that it is an easy problem. Thus, the researcher observes that there is no mutual relationship between the government and people. Then, it can be ascertained that the disasters will attack them easily although all of them have been reminded through certain warning.

Another example of forecasting climate change's function is presented below.

"Um," answered Jeremy, gesturing back where he came from, "the coast is underwater."

"Surely the government has a plan," answered the soldier.

"I think the government is about to do a runner," said Victor, pointing to the road. A convoy of red vehicles sped past, whipping up the wind.

(MacDonald, 2010:26)

The function of forecasting climate change above is how certain attitudes can bring disasters. It can be inferred that forecasting has given warning to the people about the increase of the sea level. It endangers their life and the place where they live in. The soldier replies Jeremy's statement by saying that surely government has a plan. Unfortunately, the fact shows that the government is irresponsible because they become a runner. This case is very ironic as many people trust and have a great expectation to the government. The government indeed makes them disappointed. They merely think of themselves with an irrational reason to be the savior of people's life. Thus, the researcher thinks that the government only tries to get public attentions by hypocritical actions and give a promise to save them.

Moreover, forecasting can make people understand how dangerous the climate change is.

Exactly,” said Crickle, “so between this, the floods, and the droughts, we’ve had to improvise, come up with ways to uncouple food production from the land.” He crooked a finger at them, and they followed him down another glass hallway to the doorway of another dome. Jeremy and Victor reflexively covered their noses as the stench hit them. The floor was covered with brown and white mush that teemed with grubs and cockroaches. The insects scaled the walls, the metal walkway, and the handrails. Everything in the room moved.

(MacDonald, 2010:27)

This part of the story shows the readers that climate change is dangerous. Crickle says that the effects of climate change are floods and drought. He also tells Victor and Jeremy that if it happens continuously, there will be no food left and people will die. Therefore, it is clearly shown to all the people that climate change is not a simple problem. This is a very big problem and it endangers people’s life. Self-awareness in protecting nature is needed to solve this problem.

B. The Ways the Environmental Issues Depicted in the Novel

In order to answer the second objective of this research, the researcher employed Stanford’s and Roberts’ theory of literary elements. Here the researcher focuses on two elements. These literary elements become the main point where the story is presented. They are characters and point of view. Nevertheless, the way the researcher answers the second objective is different from the real theory of Judith A. Stanford and Edgar V. Roberts. He tries to summarize the theory by dividing into several categories. They are “By Speech”, “By Action”, “Participant point of view”, and “non-participant point of view.” These two elements and

categories are ordered based on the number of data, which is then explained further in the below section.

1. Characters

Stanford (2006) states that characters are the fictional people who take part of the action of a literary work. Characters hold an important role in constructing a story. The researcher considers that characters are important parts of the story. When there are no characters at all, there will be no story. In literature, a character is a representation of a human being presented to the readers or people through the depictions of actions, conversations, description, and reflection.

Roberts (2003) states that in a story or play emphasizing a major character, every reader may expect that each action or speech, no matter how small, is part of a total presentation of the complex combination of both inner and outer self that constitutes a human being. For that reason, revealing characters' action and speech are considered important things for the researcher. Thus, the researcher will show some characters' action and speech in order to show the depictions of environmental issues existing in the story.

a. By Speech

In *Finitude* some characters' speech play important roles in constructing the understanding of a story. It means that the speech of the characters will help in revealing the purposes of a story. The part of the story below will show the importance of speech to understand the purpose of a story.

Victor crossed the lobby with his hand extended. "I'm your new neighbour," he said. "My ma owned this place, but she's been in a home forever. Non

compos mentis. Environmental poisoning or something. She finally kicked off a few weeks ago and left it to me—pretty damned handy, since they were going to knock down my old building.

(MacDonald, 2010:5, underline mine)

A character's speech is an important element in understanding this part of the story. It tells the readers of this study that there is a problem happens. Here, a speech can be more effective way to inform them that the nature is suffering. Information is needed to make a preventive action for disaster and, in this case, speech plays an important role to persuade people to do something for nature. In addition, Victor is one of the important characters of this story. He becomes a close friend of the major character. That is why, what Victor says and argues are the real portrayal of the conditions happen in the story. Victor's speech tells the readers that environment gets poison. The word poisoning implies to meaning of certain gases, such as methane, carbon dioxide, or another gas. The gases touch environment and make contamination. It means that the environment is suffering and it suffers from certain gases produced by humans. The researcher points humans as the actors of this problem because their activities obviously bring negative effects to the environment. For example, humans who work in a factory obviously contribute to the air pollution. For that reason, the researcher thinks that all of the people should be responsible to solve this problem by rising self-awareness in order to rejuvenate nature.

The importance of characters' speech is also shown below to the readers in the part of this story.

Oh, that's a good idea," said Victor. "Rice production releases methane as a side-effect, but seeds, that's a nice—" Specks flew into his eyes and cut him off.

(MacDonald, 2010:14, underline mine)

A character's speech can be a medium to share that some problems happen. It will attract more people in general, specifically the readers of the story to listen to the explanation delivered by the characters. Moreover, a speech indirectly can change the mindset of the people because of the words' power of the character is undeniably strong. Victor is the best companion of Jeremy during journey to Iktiyault. He has a wise opinion towards nature. For that reason, what Victor argues about nature is a something which closely related to the nature's goodness. Here, Victor's speech gives the readers important information about the danger of food's consumption. At the first time, probably all of the people do not understand that the rice contain certain gases which can endanger people's life. However, Victor's speech gives beneficial information to the readers about it. It opens up eyes of the readers that rice production releases methane as the side effect. Then, the readers can imagine how much methane is released during the rice production. On the other hand, the readers also know that methane is one of the greenhouse gases. Thus, it makes the researcher think that people should act wisely. If they already know that methane is also produced during the rice production, they do not need to add the quantity of methane in the atmosphere. It means that humans' activities which can produce methane should be reduced.

In addition, sometimes character's speech shows the readers about their characterization and the proof is presented below.

“Despite his cartoon-cat appearance, Victor assumed a professorial pose. “Misrule honours the shadow side of our lives. Life exists because of death. All the fuel our society was built on—it was the trawled-up remains of things that lived before us. Isn’t it ironic that dead dinosaurs were ultimately the means we used to drive ourselves to extinction? All the things we take from the ground—gold, diamonds, coal, petroleum, radioactive rocks—they all corrupt everything they touch. Misrule is the night of shadows, a time for letting out a little chaos in the hopes that it will help us maintain control over the light world we’ve built on top of a graveyard.”

(MacDonald, 2010:9-10, underline mine)

A character’s speech is an effective way to tell the readers about the negative attitudes of the humans in the story. It provides an exposure to the readers for what they have done in the story. Naturally, a character’s speech is considered less powerful to show problems happen in the story. However, a character’s speech in this story can be a beneficial way to show the readers that environment is the victim of the humans’ negative attitudes. This part of the story indeed opens up the readers’ mind that humans’ negative attitudes have driven them to the extinction. The researcher elicits from Victor’s speech that people always explore and exploit nature without thinking of the effects. It completely shows that Victor is very respectful to the nature although he is a businessman. Victor’s speech also shows the readers about humans’ exploitation. It shows that they have taken gold, diamonds, coal, petroleum, and radioactive rock from the ground. Unfortunately, these humans’ exploitations are not followed by a good preservation. They just leave the nature after exploiting and of course the destruction cannot be hindered. Furthermore, it can be inferred that all the things taken from the ground are formed by fossil fuels. In short, if the mines are explored too much, carbon will also be released too much. There will be a carbon cycle and it will lead to the cause of global warming.

The next importance of characters' speech will show the unique phenomenon that happens in this recent year.

"Who's throwing them?" asked Jeremy, looking around, angry now. As he turned his face toward the wind, something hit it with a splat. "What the—?" A tiny, wet thing tumbled down the front of his suit and he caught it. "A frog? Who the hell throws frogs at a wedding?"

Seeds, insects, fish, and other small creatures started raining down on the crowd. As they ran for the tent, Jeremy yelled to Des, "What's going on?" Panting and wide-eyed, she looked at them.

"What is it?" asked Victor, reaching for her hand.

"The jetstream—something's happening to it," she said.

"Jetstream?" asked Jeremy.

"It's like a river of wind that circulates around the globe up near the stratosphere. Sometimes things get sucked int—"

(MacDonald, 2010:14, underline mine)

A speech of the characters is a medium for transferring knowledge. The readers of the story will understand something because of the speech delivered by the characters. A speech can also be a powerful way to change the way of people's thinking. A character's speech can open up the readers' imagination towards the future problem which will be encountered by them, if there are no significant actions. It can clearly explain something which is considered illogic and make the readers believe in what is told in the story. All of them can be seen on how important the character is. Moreover, it is indeed true that the researcher has explained this phenomenon in the previous topic. However, he thinks that this part should be elaborated more in order to get a good understanding. Then, it can be inferred from Despendra's speech that it is a natural phenomenon. Despendra's speech becomes the key point of the understanding of it. Despendra is a genius scientist woman who really understands science and her existence in this story is very important. She can be considered as a source of knowledge. Her speech

explains the readers about the phenomenon that happens in the story. She tells the readers about the danger of extreme weather or climate and her speech shows that the phenomenon that happens is rational. It happens not because of magic or something, but she tells that it is natural and can be explained by science. She talks to Jeremy and Victor that it is usually called Jetstream. For that reason, it gives proof to the researcher and readers that characters' speech is extremely beneficial to understand the purpose of a story.

b. By Action

This discussion helps the readers to derive important points and values in the story. It also tells the environmental issues that happen in the story through the depiction of the characters' action.

This part of the story below shows the readers about the characters' action which can give beneficial information.

It's a compressed--air engine. Wow, I haven't seen one of these in ages. I don't know why they didn't catch on. I suppose 'cause you can't have a monopoly on—"

"Jeremy!" shouted Victor. He looked up and followed the direction of Victor's finger: the top of the hotel was on fire.

"Okay, um, well. I turned on the compressor. That will fill the tanks, and then we can start it.

(MacDonald, 2010:32, underline mine)

A character's actions can tell more than what can be done by speech. A character's action has a strong power to provoke people to change something. It directly gives an influence to the mindset of the readers. In this story, a character's action is indeed powerful media to show the readers of the story towards the effects of humans' negative attitudes. Jeremy is a major character of the story and

the story talks about the journey of saving his parents. Jeremy's action gives the readers basic information about the use of technology. Compressor has a similar function like air conditioner which can remove heat. Thus, a Jeremy action of turning on the compressor is like turning on air conditioner. Unfortunately, many people still do not realize about the effects produced by an air conditioner or a compressor. Many rumors have spread and some scientists have found that this technology can release carbon dioxide as the side effect of it. In addition, carbon dioxide belongs to the greenhouse gases and they contribute to the cause of global warming. Nevertheless, people cannot deny the truth that this technology is indeed useful for life. Its function can reduce and remove heat. Unfortunately, if it is used in a long period of time can tear ozone layer and the result will be warming which engulfs all parts of the Earth. Thus, the researcher gets the value from Jeremy's action that people should be wise in using technology. It cannot be over-usage, and it should be effective and efficient.

The following quotation shows the readers the process of carbon's contamination to the atmosphere.

Jeremy bustled about the flat, getting it ready for Des's arrival. He placed candles around the room, and was happy with the effect. He'd managed to score these in the black market—things that released carbon needlessly through burning were not allowed. But they gave the room a soft, pleasant glow that contrasted nicely with the downtown lights through the large, arched windows along the wall. In two hours, the city would go completely dark for the night except for essential streetlights.

(MacDonald, 2010:4, underline mine)

A character's actions in this part of the story construct an understanding of the carbon dioxide impacts. If there are no actions done by the characters, the readers will not know about the negative impacts of carbon dioxide. Jeremy as the

major character of the story plays an important role in constructing an understanding towards a story through his actions. It is shown from Jeremy's action that he places candles around the room. Then, it can be inferred further in story that Jeremy realizes the effects of burning candles. He is only a salesman, but the way he thinks about nature is impressive. He has a good knowledge in nature's preservation although he is not scientist. He knows that they can release carbon to the atmosphere and carbon can be easily produced through the process of oxidization. The oxidization's process can be formed when there is something burnt. Thus, the researcher concludes that the use of an overwhelming carbon can cause natural disaster, global warming. Moreover, Jeremy's action portrays that the prohibition of carbon usage is obvious because it can endanger people's life.

Next, the characters' action in this part of the story shows negative attitudes of humans which can contribute to the global warming.

He climbed the ladder to the flat roof of the wheelhouse and lay down there. The hot, sticky plastic surface of the solar panels was uncomfortable, so he took off his shirt, spread it out, then lay back down.

(MacDonald, 2010:69, underline mine)

A character's actions will show the problems more than the characters' speech. It is an effective element to sharing the problems happen in the story and also to change something after knowing the problems. It creates strong power in changing the readers' mindset specifically when it deals with important character of the story. Jeremy as the main character clearly explain about the conditions happen in the story. Jeremy's action shows the readers that people really depend on plastic. It can be inferred that high intensity of plastic usage is obvious. The fact cannot be denied that people always use plastic as a part of daily needs.

Plastic indeed contains carbon and the part of a story above shows the further effects of plastic usage. Not only does it release carbon to the atmosphere, but it also produces heat. Thus, the researcher assumes that there will be more effects of plastic which can be more dangerous if people do not try to limit its usage.

The main character's action in this part below shows the readers about the bad impacts of *Fulo's* project done by the government.

“Jeremy looked forward. They were headed toward a small outcropping of rock that rose from the tundra, a small stony mountain. He looked back to see a ball of fire shoot from the hole, across the sky, followed moments after by another. Then smoke billowed from the crater, white at first, then black, tumbling upward into the air, redoubling itself with each passing second, like a giant, insubstantial, billowy black tree emerging from the ground.”

(MacDonald, 2010:100, underline mine)

A character's actions convince the readers of the story more about the disasters happen because of humans' negative attitudes. It gives a clear depiction of the chaos done by the *Fulo's* project in the story and this depiction will less effective when it deals with a character's speech. Therefore, a character's actions play important roles in the depictions of environmental issues in this story. This part of the story above happens during an operation of *Fulo's* project. This project uses rocket to block the Sun. The important point in this part is Jeremy's action showing that there is a ball of fire shot from the hole. It is followed by smoke and the smoke itself is an active producer of carbon. It can be inferred that the carbon's production is released through rocket. Moreover, this part also shows that the crater plays its roles in producing smoke and many substances. They can be carbon dioxide, methane, heat, and many others which can slice ozone layer. Therefore, the researcher considers that this part of the story becomes a

culmination part of the novel. After this event has finished, the environment surrounding *Fulo*'s project gets destruction and it seems that people start living like in the prehistoric life.

2. Point of View

The researcher chooses point of view as a subject which should be discussed because it becomes the foundation of understanding the story. He thinks point of view is a prominent thing in constructing the story because this element of literature plays an important role to show the readers about the perception or opinion towards the story, which is different from one person to another. Therefore, point of view is the element which deals with difference and it refers to the readers who create meaning of the story.

According to Stanford, point of view is “the position from which the details of the work are reported or described” (2006:40). From this definition, people can simply understand that point of view deals with people's perception, in which he or she sees the details of a story.

Furthermore, point of view may also be considered as the centralizing or guiding intelligence in a work. It becomes the mind that filters the literary experience and presents only the most important details to maximize the impact of a story. Narrative points of view can be divided in two sorts, *participant* (or *first person*) and *nonparticipant* (or *third person*) (Barnet: 2003). In other words, the narrator may or may not be a character who participates in the story. Each of these two divisions can be subdivided: participant (narrator as a major character and

narrator as a minor character) and nonparticipant (omniscient, limited omniscient and objective).

a. Participant Point of View

In participant point of view, narrator or the teller of the story is also a character in the story. In this case, the narrator uses the first-person (“I” or “we”). Stanford (2006:38) states that first-person narrators can, of course, report only what is in their minds or what they see or hear. In addition, the narrator in first-person narrative can be a major or a minor character in the story. For that reason, the researcher considers that it is important to be discussed because the readers can see the details of this story in one character’s view.

Participant point of view helps the readers to understand the intention or the ways a story is told in a character’s view.

“On several occasions, people had confided to Des that they thought Jeremy was “a little jerk”, but something about him charmed her. The effect worked on his clients, too, who over-looked the broken part of him. He wore a designer suit as sharply as a lobster wears a shell, and was just as shapeless without it—like now, dressed casually at home.

“I know what happened to the people on that ship,” she told him. “They passed through a patch of methane, likely released from clathrates—ice deep under the ocean it had been trapped in for millennia.”

(MacDonald, 2010:4, underline mine)

A participant point of view is an effective way to affect visions towards the problems happen from the characters’ perception. Here, the readers can see the way of the characters’ responds to the environmental issues exist in the story. A character’s view towards the problems encountered in this story will convince the readers more about the environmental issues. The part of the story above shows

the readers that the participant point of view comes from important character. Despendra is a genius scientist who is expert in meteorology and nature. Despendra's point of view shows that one of the greenhouse gases had been trapped inside the Earth. She assumes that this gas can release in certain time. Probably, if Despendra does not explain or think about this gas, not all the readers know that it is dangerous. In addition, the researcher has explained that methane is categorized as one of the greenhouse gases. The greenhouse gases give big contributions to the deployment of greenhouse effects. Thus, the researcher regards that Despendra's point of view is indeed important to explain to the readers that the dangerous gas had been trapped in for many years.

Another example of participant point of view is presented in the story below.

"Victor hooked a thumb at Jeremy. "We came here to see his parents off."
 "Where did you send them?"
 "We figured someplace cold would be good," volunteered Victor, proud of his thinking, "so we sent them to Iktyault."
 Des's jaw dropped. "You didn't."
 "Why?" asked Jeremy. "What's wrong with that?"
"That's the worst place on Earth you could have sent them. Iktyault is thawing. The frozen ground is releasing methane into the air. Sooner or later, it's going to ignite, and everything there is going to be incinerated."
 (MacDonald, 2010:19, underline mine)

A participant point of view will be persuasive way to show the readers that the story is not monotonous. It is due to the fact that the story contains different perceptions to respond to the environmental problems happen in the story. It gives more trustworthiness for the readers that the problems are indeed dangerous. The conversation above happens between Despendra, Jeremy, and Victor. This part shows the readers about the importance of participant point of view to provide an

understanding towards a story. Despendra's point of view can be an aid to elicit the significant information that the coldest part of the Earth is actually the dangerous part. Des as a scientist tells something important to the readers when they do not know about Iktyvault. Probably, if Despendra does not appear and tell Jeremy and Victor, the readers will not know that Iktyvault is the worst place. She explains that the frozen ground can release methane into the air. Slowly, but surely this gas is going to ignite. In short, the researcher has explained that methane is one of the greenhouse gases. It is indeed dangerous for human's health and also life. Methane which had been trapped in Iktyvault will release and explode in a matter of time. Then, ice will melt and there will be an increase of the sea level. Therefore, the researcher thinks that another person's view is indeed important to understand a story because what one reader perceives can be different from another reader.

Participant point of view below shows the readers about the existence of another substance in the Earth besides methane.

“Jeremy nodded, then raised his head. The sky was a deep sea--green and the air smelled of ozone. Nobody was looting the shops around them. They knew something was coming, and more objects would not be a help. Jeremy felt it, too, the urge to find people he cared about and to hide with them, as if that would provide safety. Beneath that lurked the uncomfortable knowledge that everything certain was about to end, and no reassurance or affection could forestall it.”

(MacDonald, 2010:20, underline mine)

In this part of the story, participant point of view determines the understanding towards the environmental issues is depicted. The environmental issues, here, are seen in one of the characters' view. The specific perception will

be derived from a single person. It can be seen that Jeremy's point of view constructs an important idea which says that the air has ozone smell. From Jeremy's point of view, the readers should realize that an existence of ozone is obvious. It is indeed true that ozone belongs to the greenhouse gases, but an important point, here, is ozone can also produce carbon. Therefore, the danger of ozone is clearly described from the expert's statement. The researcher thinks that Jeremy's view towards the air which smells of ozone phenomenon plays important role to make him understand. His view makes the researcher pay attention to the choice of proper environmental issues. At the first time, the researcher considers that ozone becomes an identity of the greenhouse effect's category. However, Jeremy's view shows him that the effect of ozone which can produce carbon harms the environment. Then, the researcher knows that the proper category is the carbon cycle.

The importance of the participant point of view cannot be denied in the story. It is presented in the part of this story.

"In a positive feedback loop," she continued, "effects compound each other. The change goes from incremental to exponential. Within systems as complicated as weather and climate, we don't often know in advance how one aspect will affect another. They're chaotic, and in chaotic fields, sometimes it just takes one little thing to topple it all into a new state." She looked down at her drink and dipped her finger in. "Some people call the place where all these elements converge a *basin of attraction*." Looking up at him, she put her finger in her mouth and kissed the drop of liquor from it."

(MacDonald, 2010:5, underline mine)

Participant point of view, here, plays an important role in showing the perception towards the impacts of extreme weather and climate. The participant point of view focuses on one character's view, Despendra. Therefore, the way the

character sees the natural phenomena will be more specific and clear depictions are derived. The conversation above happens between Jeremy and Despendra. The importance of participant point of view, here, is obvious. From Despendra's view towards phenomena that happen in the recent times, it shows the readers that there is an increase of chaotic disasters as result of extreme weather and climate. Despendra's view in this story becomes a source of understanding for the readers. There are not many people who realize that the world is suffering from chaotic disasters. Many people tend to be busy to do their life and business. Thus, Des' view gives a light, warning, and a hope for the readers that they still have time to repair their mistakes. It means that all of the people still have time to make and heal this world. Des' view towards this chaotic disasters as result of extreme weather and climate opens up the readers' mind that it is not merely a local problem, but it has turned into international problem. For that reason, the researcher regards this problem as a responsibility and duty for all of the people in this world.

b. Non-Participant Point of View

Non-participant point of view, the narrator of the story does not introduce himself or herself as a character. In fiction, the narrator is sometimes omniscient. According to Standford (2006), omniscient is a narrator who knows everything and reports both external and internal actions. He states further that a variation is the limited omniscient narrator, who sees the mind of only one character. Nevertheless, omniscient and limited omniscient narrators may also make

evaluations and judgments of characters and events. Thus, the researcher considers that non-participants point of view is important because they are objective. They provide information and report for the readers about a conversation, event, or something which relates to the story.

Here, this part of the story shows the readers about the role of non-participant point of view to construct an understanding of this story.

‘The engine burped again, then the car leapt forward, toward the tanks. Jeremy turned the wheel and stepped on the accelerator. He angled them back toward the main street. Flames whipped around the treetops and leapt over the town. All the roofs were on fire. A cloud of fire burst from the fuelling station behind them with a rumble.”

(MacDonald, 2010:32, underline mine)

This part of the story shows the readers that a narrator only sees the mind of one character, Jeremy. The narrator is a limited omniscient narrator. The limited omniscient narrator shows that the fuelling station must contain methane which is easily burned. Methane is the potential substance to get burnt and easy to explode. Methane is also categorized as one gas which belongs to the greenhouse gases. For that reason, the limited omniscient provides a description about a number of methane which can release during a conflagration. In addition, this case gives the readers information that methane is not the only substance which releases. Carbon dioxide is also released through the smoke of the blazing fuel station. Then, if this case happens continuously, the global warming cannot be avoided.

Moreover, the further impact of the blazing fuel station above is also portrayed in the part of the story below.

Jeremy pointed the car toward the far side of town. The forest was on fire beyond there, but he saw no better exit, and was determined not to turn

around. His parents were forward, and that was the only acceptable direction he would consider.

Chunks of burnt wood littered the road, and smoke reduced the visibility greatly. Jeremy dropped their speed to weave around the objects on the road, until he spotted a large tree falling ahead of them. He stomped on the accelerator, pushing it to the floor. Victor grabbed his thighs and made an anxious humming sound.

(MacDonald, 2010,32, underline mine)

Limited omniscient narrator can only see from one character's view. It means the perception perceived is limited. He or she only knows from the Jeremy's spectacles in considering environmental problems. The limited omniscient narrator shows the further impact of conflagration in fuel station. It is told, here, that the effect of gas (methane) and heat can burn the forest. Then, the researcher imagines that if there is no limited omniscient narrator, the readers will not know that there is a further impact of the conflagration. That is why, his or her existence is very important to make the readers understand about the environmental crisis. In response to this, the readers can conclude by themselves that the life and environment where people live in are endangered. Forest plays crucial roles in humans' life sustainability because it provides oxygen as substantial matters for humans' life. When there are no forests, there will be no life at all. Next, the limited omniscient also raises ecological consciousness for the readers to protect and preserve forest as a main support of life.

The datum below shows the readers that global warming problem has touched many aspects of life.

Jeremy hadn't worn his pin in days because, like everyone else, he wanted to find out what was going on. He stopped at a newsagent's to buy a newspaper, his first in ages.

The opposition party, he read, had received documents that implicated Prime Minister Hardwick in a scandalous carbon crime. But, again proving himself a masterful politician, Hardwick relegated the story to the editorial pages by trumping it: A front--page headline read “PM to the Rescue”.

Yes, Hardwick admitted to one of the paper’s journalists, something had gone wrong. The climate had tipped, unforeseen, into a dangerous new state. But he was going to fix it. According to Hardwick, Fulo, the company he ran before entering into politics, had developed a technology that could reverse the trend and fix the planet. “For some time,” said Hardwick in the article, “Fulo has been providing energy to meet many of the country’s needs. But this whole while, Fulo has also been conducting research and development into the crucial new science of geoengineering. This project has delivered what may prove to be the most important breakthrough in human history.”

(MacDonald, 2010:16, underline mine)

Omniscient narrator is considered less trustworthy than participant point of view because the perception which is delivered can be the author’s perception. Then, this will be a personal’s view of the problems. Unfortunately, this statement is not totally true. The omniscient narrator in this story gives an objective view towards environmental problems happen. He or she gives report on the conditions happen in the story. It gives a clear depiction towards the problem of global warming. Global warming becomes a global problem for people around the world. It is already known that it is a threat and it touches all aspects of people’s life. The omniscient narrator who knows everything which relates to the story plays role in showing a problem. The datum above shows that there is a problem which relates to a scandalous carbon crime, while carbon indeed contributes to the global warming disaster. Here, it proves that global warming touches many aspects of humans’ life including politics. Thus, omniscient narrator shows the readers that there is a politization over nature. Politics has touched environment or nature where people live in. In addition,

omniscient narrator tells that the Prime Minister Hardwick is really confident in considering this problem. He believes that it can be solved easily by his Fulo's project. Unfortunately, omniscient narrator also tells and opens the readers' mind that Hardwick's statement is just political. Hardwick only wants to get public attention and is considered as the saviour of his men. For that reason, the researcher considers omniscient narrator's role is important to reveal a truth in this story.

Next, the datum below will show the readers about non-participant point of view's role in the forecasting climate change discussion.

"She has never seen this before. 'It's huge,' she says. She keeps saying a word, but I'm not sure how to translate it. 'Wheel' or 'cyclone' or something like that. She says your world will turn around in it, but she can't see what it is because it's not natural."

(MacDonald, 2010:52, underline mine)

Omniscient narrator plays an important role in showing the perception towards environmental problems happen in the story from the outsider's view of the story. It means that the narrator is objective. The narrator can report external and internal actions done by the characters in the story. Thus, the actions are seen from the characters and the readers' spectacles in the story. Forecasting climate change plays an important role to help the readers in understanding global warming phenomenon. Here, omniscient narrator appears to help the readers to understand a message in this story. The omniscient narrator tells the people that there is a girl who talks about cyclone. The readers have already understood that cyclone, storm, and hurricane happen because of the existence of an extreme

weather or climate. Then, omniscient narrator clearly tells that there will be a cyclone which engulfs people's environment. The omniscient narrator also describes the effect of cyclone which can destroy everything surrounding it. Thus, the researcher thinks that there is a similar function between forecasting and the omniscient narrator. They can be a medium in delivering certain information and their existences are indeed important for this story.

C. Discussion

A variety of environmental problems now affect an entire world. These environmental problems do not merely endanger local people, but they have transformed into global problems encountered by international people. They have also touched all parts of the society and endangered people's life. Unfortunately, while the condition of the Earth is getting worse from time to time, there are still many people who have less awareness. Therefore, the discussion and exposure about environmental problems are needed, in order to raise people's awareness in preserving nature.

For Glotfelty (1996: xxiv) consciousness rising is very important in responding the environmental problems since people will never solve the problems without starting to think about them. It means that the environmental problems will always exist eternally if people still do not have a will to rejuvenate and preserve their environment. For that reason, people need a medium to rise self-awareness towards nature.

There are many kinds of media which can help people in understanding nature. They can join seminars or conferences related to environmental issues. In this case, literature appears to give its light and becomes a source of understanding. It can share many problems encountered in today's life and also can open up people's mind regarding the environmental problems that happen in this era. Literature, indeed, can be media to transfer messages to the people about nature's preservation because its function itself is an articulation of people's thought. This happens in *Finitude* and it provides environmental issues which happen during globalization era. At the first time, probably people will consider that this novel is boring. However, later on people will get enjoyment in reading this novel. It is simply about a journey of people in revealing and also finding the truth of environmental issues. Unfortunately, this simple journey leads to an understanding of a very popular problem today, which is global warming.

Finitude is a science fiction novel which becomes a breakthrough of reality. There are some phenomena which never happen before, but those can happen if humans have less awareness toward environment. In *Finitude*, people will get information about global warming in general, and then it reaches knowledge about the causes of global warming. Perhaps, people still think that global warming is a single problem and there are no specific phenomena which accelerate it. This novel changes this perception and it forces the readers to search further about global warming. The global warming cannot stand alone as a natural phenomenon. According to Archer (2011), it is caused by three environmental issues. The first is the greenhouse effects which are considered as the dominant

environmental issue existing in the novel. It is a process where heat is absorbed and trapped inside the Earth because of humans' negative attitudes. This heat is the main cause of an increase of the Earth's temperature. Nevertheless, the greenhouse effects do not happen naturally. There are three factors which trigger the greenhouse effects. They are blackbody radiation which centers on heat radiations; the greenhouse gases, which can accelerate the greenhouse effects; and the last is heat and wind, which become the only natural phenomena. Those environmental issues are the problems which recently affect the Earth. Then, those can open up people's mind that they are the main causes of this disaster.

Another environmental issue existing in the novel is the carbon cycle. This novel provides a clear description on how people in the story really depend on carbon usage. The carbon cycle itself happens through photosynthesis and respiration process and the carbon cycle are caused by two phenomena. They are carbon on Earth which centers on carbon which exists inside the Earth, and fossil fuels and energy which are mainly produced by dead creatures in billions years ago. Then, fossil fuels and energy are used by humans and can be found in mines, vehicles, and industry. This environmental issue proves the readers that people really depend on the carbon usage. Naturally, this novel persuades people to reduce carbon usage.

The forecast is also an environmental issue found in the novel and its term refers to climate change. The novel clearly depicts that an extreme weather or climate happens in real life. The forecast is supposed to deal with the existences of weather and climate. Thus, an understanding towards weather and climate, and

then the forecasting climate change become the basic knowledge which should be possessed. Weather centers on any place of the total temperature, pressure, winds, moisture, and precipitations conditions for a short period. On the other hand, climate focuses on an aggregation of near surface atmospheric conditions and weather phenomena. The last is the forecasting climate change which becomes the warning of an extreme weather or climate. Therefore, this novel is indeed beneficial for people to understand about an extreme weather or climate which happens in today's life. This novel also becomes a source of knowledge about the effects of the extreme weather or climate. This thing can rise people's awareness to be more careful to the forecast phenomenon which unpredictably happens.

Those three causes of global warming are delivered through two prominent literary elements. They are characters and point of view. Jeremy's action and Despendra's speech can be good examples in rising ecological awareness towards environmental issues which recently attack the earth. Both of the characters' action and speech have the same level and power in the story. There is no one element which is dominant because they complete each other. The characters' speech becomes an indicator and explanation of the existence of environmental issues, while the characters' action becomes the evidence that the environmental issues, indeed, engulf humans' environment.

Furthermore, participant point of view and non-participant point of view helps the readers to construct an understanding of environmental issues existing in the novel. For example, Despendra's point of view as one of the characters gives the readers a clear depiction towards jetstream phenomenon which also

happens in real life. Omniscient narrator who knows and reports everything about the story also shares knowledge for the readers about conditions, events, or character's feeling and thoughts. Thus, the two elements are completely useful and substantial to understand the idea of the story. If the idea is derived, then the messages about preserving nature are also obtained. In addition, the participant point of view becomes a dominant element of this novel. It proves the readers that characters' view towards environmental issues happening in these recent years is very important. It provides more understanding for the readers because they can imagine as if they become the characters of the story.

Those findings show that the novel is indeed persuasive and beneficial for many people. *Finitude* contains environmental issues encountered by all of the people in the world although there are some phenomena which never happen before. However, those may happen if there are no good understandings toward them.

Science fiction novel, *Finitude*, has a power to provide a future vision of the world. It breaks a reality and logical thinking, but this novel can be a reminder for the humans on the Earth that the illogical phenomena can happen if they cannot be wise rulers of the Earth.

Finitude invites its reader to be more sensitive in nature's protection. It encourages many people to be more responsible to their environment. It also tries to provoke people to save the Earth by providing some environmental issues which become up-to-date issues in today's life. Then, if the environmental issues existing in the novel have been understood, the readers will have self-awareness

and try to do redemption. People's self-awareness and redemption will be nature's preservation and some actions which prevent these disasters from happening. Therefore, when all of the people have done their redemptions and rejuvenations towards the Earth, people can live peacefully and harmoniously with nature.

CHAPTER V

CONCLUSIONS

After analyzing MacDonald's *Finitude* related to the environmental issues and the ways they are depicted, the researcher can conclude the kinds of environmental issues existing in the novel and the ways the environmental issues are depicted in the novel.

A. Environmental Issues Existing in *Finitude*

There are three environmental issues existing in the novel namely the greenhouse effect, the carbon cycle, and the forecast. First, the greenhouse effect is a process where heat is absorbed and trapped inside the Earth because of the actions done by humans and this heat gradually increases the Earth's temperature. It can also happen because of the quantity of uncontrollable gases of the greenhouse. In this novel, the greenhouse effect is presented through some phenomena and actions that happen during the characters' journey. It becomes a dominant environmental issue existing in the novel. There are three phenomena which become the cause of the greenhouse effect. They are blackbody radiation, the greenhouse gases, and heat and winds. Specifically, all of environmental issues focus on different roles to make the Earth get heat. Blackbody radiation focuses on transferring heat radiation. The greenhouse gases focus on the gases

which contribute to the cause of the greenhouse effect. The last, heat and winds focus on their bad impacts which accelerate the greenhouse effect process.

The second environmental issue is the carbon cycle. The carbon cycle is the process where the organic compounds in green plants do the photosynthesis process and are followed by respiration as a source of energy. The product of incorporate photosynthesis and carbon dioxide will be released in the atmosphere through the respiration process. Then, the product will be released back to environment as the energy for living things. This novel demonstrates how carbon becomes something needed for many people. Carbon becomes a part of their life and worth properties. Furthermore, there are two phenomena which accelerate the carbon cycle. They are carbon on Earth and fossil fuels and energy. Carbon on Earth exist in a range of oxidation process and chemical forms which can be found in atmosphere, ocean, and land. Then, fossil fuels and energy exist due to the fact that any carbon of biological origin were created for over billions years ago. Both of the environmental issues can be found along the story and can be the evidence that humans completely rely on them.

The third environmental issue existing in the novel is the forecast. Since there is no exact or general definition about it, the basics knowledge is needed to understand this environmental issue. They are weather versus climate and forecasting climate change. In the novel, weather and climate play an important role in the contribution of disasters cause. The weather of any place is the sum total of its temperature, pressure, winds, moisture, and precipitation conditions for a short period of a day or a week. On the other hand, climate is an aggregation

of near surface atmospheric conditions and weather phenomena over an extended period in a given area. The novel demonstrates how the extreme weather or climate is going to attack and endanger the people's environment. Furthermore, forecasting climate change happens as an analogy between the forecast to the global warming itself. From this simple analogy, it can be summarized that the increasing of the Earth's temperature becomes the impacts of climate change. Forecasting can be a medium of transferring information related to the climate change. In the novel, forecasting climate change becomes an important medium in transferring information about disasters which may happen later. Thus, the conclusion can be drawn that the forecast is supposed to deal with extreme weather and climate with the forecasting climate change as the medium to inform about the extreme weather and climate.

B. The Ways the Environmental Issues Depicted in the Novel

After juxtaposing some theories related to literary element, the researcher can conclude that *Finitude*'s environmental issues are depicted through two dominant literary elements. The first is the characters and these can be seen through characters' action and speech regarding certain problems encountered by them. Both of characters' action and speech indeed portray the environmental issues existing in the novel. They provide images as closely as possible to the reality. Thus, those can make the researcher and the readers of this research get the essences of the story.

The second literary element used is point of view. This novel uses participant point of view and non-participant point of view, in order to show different perceptions in considering certain problems encountered in the story. These different perceptions or views can be a medium for explaining the purposes of the story itself. For that reason, the researcher and the readers of this research get an understanding towards the content of the story.

Finitude is an encouraging literary work containing many environmental issues that happen in today's life. It becomes a breakthrough of reality because there are some phenomena which never happen before. Nevertheless, those may happen if humans still have less natural awareness. This novel provides more vision and future prediction to the Earth's condition where humans are busy with their business, while the environment where they live in is in danger. *Finitude* also informs many people about the dangerous effects of those environmental issues. Those environmental issues can rise humans' ecological consciousness needed in this era. MacDonald's ways in delivering messages to protect and preserve nature are indeed magnificent for many people. He can open up people's mind to be more responsible for environment where they live in and can be wise rulers of the Earth.

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APPENDIX I

THE SYNOPSIS OF MACDONALD'S *FINITUDE*

After a thirty-year rationing plan called "The Effort" the prime minister declares VC Day: "Victory over the Climate". However, chronically depressed insurance salesman Jeremy Chutter knows it is all hot air. He finds that the Earth is in trouble and he finally meets with Victor, who also feels the peculiarity of this world. They figure out that the Earth is suffering from the hardships of rationing, the perpetual rain, the violent storms, disruptive floods, and also drought in every where.

Hardwick is the prime minister who promises to deliver the people from decades of struggle, lack, and worry. He tries to provoke people to believe in him to solve the disaster. He offers a solution by his *Fulo's* project to block the Sun radiation towards the Earth. His solution makes his popularity continue to soar. Unfortunately, it is merely words from a hypocritical person who tries to gain public attention. It is due to the fact that Hardwick escapes during the disaster engulf one territory. At that time, Jeremy and Victor's territory is engulfed by flood as a result of the increase of the sea level. They try to save their life and their family by moving in the safest place in the world. They think that the best place to live in is in the coldest place. Jeremy asks his parents to go to Iktyault by aeroplane.

After sending his parents to Iktyault, Jeremy and Victor try to find his relatives in other areas. During his search, they meet Despendra, a genius scientist who predicts that all of the disaster caused by global warming lead to the humans' extinction. She asks them where they have been and Victor answers that they have sent Jeremy's parents to Iktyault. Des tells them that their choice is completely bad because Iktyault is the worst place on the Earth. The frozen ground is releasing methane into the air and sooner or later, it is going to ignite. They are surprised and they decide to make a journey to save Jeremy's parents

Then, Jeremy and Victor head for somewhere called Iktyault in rescuing Jeremy's parents. On the road they encounter other travelers and the whole societies, that have responded in different ways to the horrors brought by climate change. "Terraists" roam the land, frozen ground is thawing and releasing methane that is waiting to explode and ignite, compressed air cars, a city of blind, a sea of plastic, gangs, and there is also wars over resources. They finally reach Iktyault and find Jeremy's parents.

At the end of the story, the world is going to vanish because the *Fulo's* project fails to block the sun radiation. It causes a great explosion and makes the ice get melt. There is an increase of the sea level and the world gets dark. All of the people cannot see anything for a while and gets deaf because of the explosion's sound. They find that the world is no longer a wonderful world. They surprise because everything vanishes and they have to start a new life. It is told that humans should live in the same way as their ancestors during pre-historic era. They live in the cave and try to survive in the harsh life.

APPENDIX II

Table List of the Data for the Depiction of Environmental Issues Through Literary Elements

No	Page	Code	Quotation	Thematic Meaning/Category	The Depiction Through Literary Elements
1.	2	A	Drawing his speech to a close, the Prime Minister turned and gestured at the vast ship pulling up to a stop in the harbour behind him. The cruise liner's hull glistened, an effect of the slippery polymers that reduced its drag in the water. This, along with a revolutionary engine that scrubbed its exhaust clean with sea-water, made the <i>Carpathia Diem</i> the first luxury ship to pass the International Coalition Government's rigorous Efficiency and Impact tests. Today's arrival, at the end of the ship's maiden voyage across the new polar ocean, was to be the proof of Hardwick's Bold New Day campaign.	The Greenhouse Effect (The Blackbody Radiation) Polymers can produce the energy which is transferred by sun. Then, it emits all the energy to the surrounding.	Point of View (non-participant) The role of omniscient narator is very important in understanding the story. The narrator knows everything and can report both external actions and conversation. Here, the readers can simply understand that the prime minister will do a hazardous action in order to save the earth. Unfortunately, it can be assumed that it is merely an absurd promise.

2.	4	A	<p>“I know what happened to the people on that ship,” she told him. “They passed through a patch of methane, likely released from clathrates—ice deep under the ocean it had been trapped in for millennia.”</p>	<p>The Greenhouse Effect</p> <p>(The Greenhouse Gases)</p> <p>Methane is categorized as one of the greenhouse gases. The greenhouse gases give big contributions to the deployment of the greenhouse effects. It shows the proof that methane had been trapped under the ocean for millions years ago</p>	<p>Point of View (participant)</p> <p>Despendra’s point of view shows that one of the greenhouse gases had been trapped inside the Earth. She assumes that this gas can release in certain time.</p>
3.	5	A	<p>Victor crossed the lobby with his hand extended. “I’m your new neighbour,” he said. “My ma owned this place, but she’s been in a home forever. <i>Non compos mentis</i>. Environmental poisoning or something. She finally kicked off a few weeks ago and left it to me—pretty damned handy, since they were going to knock down my old building.”</p>	<p>The Greenhouse Effect</p> <p>(The Greenhouse Gases)</p> <p>The word poisoning implies a meaning of certain gases. They can be methane, carbon dioxide, or other gases. The gases touching the environment will cause contamination.</p>	<p>Character (By speech)</p> <p>Through the speech of Victor as the character, the readers can clearly understand that the environment gets poison. It means that the environment is suffering from the gases which are produced by human. They can be produced through human activities and the places where they work.</p>

4.	7	A	<p>“Okay,” said the officer. “So, what do you make of it? You going to have to pay out?”</p> <p>Jeremy looked around the flat, but stopped in his tracks when he found the resident: flash cooked in his recliner, hair burned away, pyjamas and housecoat melted to his body. Jeremy continued to the kitchen.</p>	<p>The Greenhouse Effect</p> <p>(Blackbody Radiation)</p> <p>It can happen through the conduction between calorie and metal or other substances. It transfers the heat energy to many things. As a result, the things or the materials which exist in the surrounding of the room melt down.</p>	<p>Character (By action)</p> <p>Jeremy is the major character in the story. His action really determines the understanding of the greenhouse effects. This environmental problem happens when Jeremy is trapped in the situation of fire. At the same time, the whole place blazes. Therefore, many things touched by fire melt down.</p>
5.	7	A	<p>“Yeah, I figured,” he said, pointing at the stove--top. “The pot boiled over and put out the fire on the ring. The whole place must have filled with gas until something ignited it. A light switch maybe. Then the whole place—<i>woomph!</i>—like that.” He snapped his fingers. “So the question remains: Was it an accident, or was it negligence?”</p>	<p>The Greenhouse Effect</p> <p>(The Greenhouse Gases)</p> <p>In this case, the fire can happen because the whole place filled by gas. Gas which can be accelerated to be fire is usually methane. Therefore, when something ignited methane, conflagration will happen.</p>	<p>Character (By action)</p> <p>Jeremy figures out that the stove must use gas as the fuel. When the fire on, the gas will release in every part of the area. This condition happens because there is something ignite it. Therefore, Jeremy’s conjecture plays an important role in understanding that the greenhouse effects can contribute to the burned-out things.</p>

6.	14	A	<p>“Oh, that’s a good idea,” said Victor. “Rice production releases methane as a side--effect, but seeds, that’s a nice—” Specks flew into his eyes and cut him off.</p>	<p>The Greenhouse Effect</p> <p>(The Greenhouse Gases)</p> <p>Methane is one of the gases producing the greenhouse effects.</p>	<p>Character (By speech)</p> <p>At the first time, probably the readers do not understand that the most popular food, rice, contain certain gases which can endanger people’s life. Through what is spoken by Victor, the readers can understand that rice production releases methane as the side effect. The readers can imagine, how much methane releases during rice production.</p>
7.	17	A	<p>“I’ve had girls say they wished I was dead before, but this is a new one for me,” he said, leaving the kitchen and plopping himself on the couch beside Jeremy. “Did Des say anything about where might be safe?”</p> <p>Jeremy shook his head.</p> <p>“Well, it’s <i>heat</i>, isn’t it? That’s what’s causing all this. So where’s the coldest place on the planet?”</p> <p>Jeremy answered like a schoolboy. “Iktyvault.”</p>	<p>The Greenhouse Effect</p> <p>(Heat)</p> <p>The condition where temperature increases usually refers to the greenhouse effect.</p>	<p>Character (By speech)</p> <p>Jeremy and victor discuss a solution to save Jeremy’s parents life. The heat threats human life and can bring a lot of disadvantages. Therefore, Jeremy argues that the best place to save his parent’s life is the coldest place, “Iktyvault.”</p>

8.	18	A	<p>“We didn’t change, Jeremy, we <i>substituted</i>. Our fundamental relationship to the world didn’t change. It’s a system and we’re part of it. Now it’s going to change, and we may or may not be part of its future. I know this. Everyone knew this.”</p>	<p>The Greenhouse Effect</p> <p>The Carbon Cycle</p> <p>The Forecast</p> <p>The causes of global warming</p>	<p>Point of View (participant)</p> <p>Jeremy’s point of view towards phenomena happening becomes the stand point of this part of speech. The first-person narrator shows that this part is the representative of all environmental issues. This part is the evidence that the world is suffering from global warming.</p>
9.	19	A	<p>Victor hooked a thumb at Jeremy. “We came here to see his parents off.”</p> <p>“Where did you send them?”</p> <p>“We figured someplace cold would be good,” volunteered Victor, proud of his thinking, “so we sent them to Iktyault.”</p> <p>Des’s jaw dropped. “You didn’t.”</p> <p>“Why?” asked Jeremy. “What’s wrong with that?”</p> <p>“That’s the worst place on Earth you could have sent them. Iktyault is thawing. The frozen ground is releasing methane into the air. Sooner or later, it’s going to ignite, and everything there is going to be incinerated.”</p>	<p>The Greenhouse Effect</p> <p>(The Greenhouse Gases)</p> <p>Methane as a gas could be trapped in many things or materials.</p>	<p>Point of View (participant)</p> <p>Despendra’s point of view can be the aid to elicit the significant information that the coldest part of the Earth is actually the dangerous part. The frozen ground can release methane into the air. Slowly but surely this gas is going to ignite. Then, the explosion will happen and there will be an increase of sea level.</p>

10.	21	A	<p>“Jeremy!” called Victor’s voice. He ran through to the other flat. Victor pointed out his wall of windows. “Where’s the water?” asked Jeremy. “Way out there.” The tide was unnaturally far out, exposing tracts of mud and stranding boats.</p>	<p>The Greenhouse Effect</p> <p>(Heat)</p> <p>Heat can contribute in draining the water stock-pile.</p>	<p>Character (By speech)</p> <p>Jeremy’s question can be the evidence of the greenhouse effects. Heat depletes water stock-pile. That is why, the water vanish and the drought happens.</p>
11.	21	A	<p>The two of them stood, cocking their heads back and forth, regarding the thing, which lay there like a fallen balloon dinosaur. “That’s not going to fit in the elevator,” said Victor. He shook his head. “Sorry, of course the power’s out. And the stairwell’s even smaller. There’s no way we can get it in there.” “Unless we deflate it.” Jeremy leaned over and picked up a red plastic triangle. “There was only one CO2 cartridge with it.” “Right, and we wouldn’t want to let out the carbon dioxide, because that would be bad for the environment.”</p>	<p>The Greenhouse Effect</p> <p>(The Greenhouse Gases)</p> <p>Carbon dioxide is one of the greenhouse gases. Like methane, CO2 can exist in many materials or things.</p>	<p>Character (By speech)</p> <p>The speech which is delivered by Victor becomes the foundation of understanding that some people start having awareness towards the danger of carbon dioxide. CO2 is the dominant substance contributing to the global warming. It can be produced by plastic, even corpses of animals.</p>

12.	29	A	<p>“As long as it doesn’t rain,” added Victor. He stooped to touch the springy plants. They were yellow, like the ferns around them. “That’s weird. It’s bone--dry.” He looked up. The tips of the leaves and pine--boughs were brown.</p>	<p>The Greenhouse Effect</p> <p>(Heat)</p> <p>Heat can make every living thing dry, including plants.</p>	<p>Point of View (participant)</p> <p>Jeremy considers that the drought is now attacking the living things. It endangers the life of living things including plants. It can deplete water as the most substansial matter of living things</p>
13.	29	A	<p>“Only a day away from the Coast?” remarked Jeremy. “Hm. Maybe it’s the elevation, or the wind patterns or something.” He sat on the ground, then lay back, watching clouds cross the opening in the trees.</p>	<p>The Greenhouse Effect</p> <p>(Wind)</p> <p>Wind produces strong power to cut down the trees. It produces the overflow kinetic energy.</p>	<p>Point of View (participant)</p> <p>Jeremy’s point of view shows that wind is also a potential contributor to the greenhouse effects. The power of it can cut down many trees, while people understand that trees are very important to prevent global warming.</p>

14.	30	A	<p>Something crackled in the brush nearby. Jeremy turned to look, but couldn't see anything.</p> <p>"Oh, we should tell ghost stories."</p> <p>"Jeremy, somehow 'the Murderer in the Woods' doesn't really rate compared to 'the Planet is Going to Kill Us.'"</p> <p>"Yeah, you have a point. Screw it, let's just go to sleep." He threw his Mete into the fire. It ignited quickly, and sent glowing sparks into the air.</p>	<p>The Greenhouse Effect</p> <p>(The Greenhouse Gases)</p> <p>Methane is also considered to exist in mete. Planet, here, refers to the Sun.</p>	<p>Character (By speech)</p> <p>Jeremy argues that some murderers are less dangerous than Planet which is going to annihilate all of the people. Planet also contains the greenhouse gases and heat. Moreover, the simple food which is delicious is also dangerous. It may contain methane which contribute to the global warming.</p>
15.	31	A	<p>Jeremy lifted his head. He smelled something pleasant, something he'd just smelled recently. He raised his nose toward Victor, who took the cue and sniffed the air. He smelled it, too.</p> <p><i>Wood smoke.</i></p> <p>A plume of grey-white rose from the woods on the far side of town. A hot wind pushed around them.</p>	<p>The Greenhouse Effect</p> <p>(Heat and Wind)</p> <p>Heat and wind are different matters. When they are blended up, they will be dangerous disaster.</p>	<p>Character (By speech)</p> <p>Victor's speech shows that hot wind happens as a production of wood smoke. Then, if it happens too much, it produces the greenhouse effect.</p>

16.	31	A	<p>“Maybe we should—” started Victor, hooking a thumb over his shoulder.</p> <p>“Yeah,” Jeremy agreed.</p> <p>Hot wind blew at them from the other direction. They headed for their bicycles, but, picking them up, noticed that smoke was now rising above the other side of town, too.</p>	<p>The Greenhouse Effect</p> <p>(Heat and Wind)</p> <p>Hot wind can be produced by smoke.</p>	<p>Point of view (non-participant)</p> <p>Omniscient narrator describes what Jeremy and Victor feel. They can feel hot wind blowing at them. Hot wind is usually produced by smoke.</p>
17.	32	A	<p>“It’s a compressed-air engine. Wow, I haven’t seen one of these in ages. I don’t know why they didn’t catch on. I suppose ’cause you can’t have a monopoly on—”</p> <p>“Jeremy!” shouted Victor. He looked up and followed the direction of Victor’s finger: the top of the hotel was on fire.</p> <p>“Okay, um, well. I turned on the compressor. That will fill the tanks, and then we can start it.”</p>	<p>The Greenhouse Effect</p> <p>(The Greenhouse Gases)</p> <p>Compressed-air engine produces carbon dioxide.</p>	<p>Character (By action)</p> <p>Turning on the compressor is like turning on an air conditioner. People understand that both of the machine can release carbon dioxide. Indeed, it can reduce the heat. However, if it is used in a long period, it can tear ozone layer. As a result, the heat will attack Earth.</p>

18.	32	A	<p>Jeremy looked at Victor. “Longer than we have.” He reached into the car and released the hand-brake. “Grab your window and push. We’re going to find a fuelling station. There has to be one here somewhere.”</p> <p>They rolled the tarnished yellow plastic vehicle up the main street as the wind grew hotter and blew in alternating directions. It was starting to spin around them. Orange fire sprouted from the treetops, and several of the angled roofs burst into flame. Victor and Jeremy coughed as they exerted themselves.</p>	<p>The Greenhouse Effect</p> <p>(Heat)</p> <p>The increase of temperature will produce heat, even fire.</p>	<p>Point of View (participant)</p> <p>Jeremy considers that plastic vehicle contribute to the creation of hot wind. From time to time, the wind gets hotter. As a result, it burns many things, including the area of the society.</p>
19.	32	A	<p>“Jeremy! It’s on fire!”</p> <p>The squat white building was indeed sprouting flames. Whatever sealant was used on its roof was burning, as was the black paving at the edge of the lot. But there, also, stood a tall silver air compressor. They shoved the car toward the compressor, then dug their feet in to stop it from rolling off into the woods. Jeremy uncurled the black hose and searched the car for the air inlet.</p> <p>“Get in,” Jeremy barked. Knowing there was nothing he could do, Victor complied. He got in, rolled up the car’s windows, and sat, tapping his thighs.</p>	<p>The Greenhouse Effect</p> <p>(The Greenhouse Gases)</p> <p>The release of the carbon dioxide and other gases.</p>	<p>Character (By action)</p> <p>Jeremy’s action shows the danger of the carbon dioxide emission. It can be shown through the condition which happens to Jeremy. He encounters fire problem. Fire can happen because of the release of carbon dioxide. Moreover, it is shown how an air compressor makes more damage because it produces gases which leads to fire.</p>

20.	32	A	The engine burped again, then the car leapt forward, toward the tanks. Jeremy turned the wheel and stepped on the accelerator. He angled them back toward the main street. Flames whipped around the treetops and leapt over the town. All the roofs were on fire. A cloud of fire burst from the fuelling station behind them with a rumble.	<p>The Greenhouse Effect</p> <p>(The Greenhouse Gases)</p> <p>Methane is the potential substances to get burnt</p>	<p>Point of view (non-participant)</p> <p>The limited omniscient narrator shows the readers that fuelling station must contain methane which is easily burnt. When, the fuelling station is burnt, then people can imagine how much methane will be released and carbon dioxide are produced through the smoke of blazing's fuel station.</p>
21.	32	A	Jeremy pointed the car toward the far side of town. The forest was on fire beyond there, but he saw no better exit, and was determined not to turn around. His parents were forward, and that was the only acceptable direction he would consider.	<p>The Greenhouse Effect</p> <p>(The Greenhouse Gases and Heat)</p> <p>The heat and some greenhouse gases cause the destruction of forest.</p>	<p>Point of View (non-participant)</p> <p>Limited omniscient narrator shows that the effect of some gases and heat can burn the forest. As a result, the environment where the people live in is endangered because forest is very important in life' sustainability.</p>

22.	32	A	<p>Chunks of burnt wood littered the road, and smoke reduced the visibility greatly. Jeremy dropped their speed to weave around the objects on the road, until he spotted a large tree falling ahead of them. He stomped on the accelerator, pushing it to the floor. Victor grabbed his thighs and made an anxious humming sound.</p> <p>The tree's burning branches scraped the car's roof, but they sped underneath before the bulk of the tree landed. Jeremy looked with wild, disbelieving eyes at Victor, who cheered and thumped his fists on the dashboard. The singed yellow car darted back and forth as flames leapt overhead, but the road ahead was clear.</p>	<p>The Greenhouse Effect</p> <p>(The Greenhouse Gases)</p> <p>Carbon dioxide is produced by smoke.</p>	<p>Point of View (non-participant)</p> <p>From the limited omniscient narrator, the readers can understand that the production of carbon dioxide does not merely come from the smoke which is produced through the blazing.</p>
23.	33	A	<p>The car's air--compressor kicked in to refill the engine. Victor tapped the indicators on the dashboard. "You're sure this thing doesn't have air--conditioning?" His dark curls stuck to his forehead and his khaki shirt was soaked through with patches of sweat.</p> <p>Jeremy waved at the instrument panel. "Look for yourself, if you want. I'm going to stretch my legs."</p>	<p>The Greenhouse Effect</p> <p>(The Greenhouse Gases)</p> <p>Many electronic things undeniable produce carbon dioxide.</p>	<p>Character (By speech)</p> <p>What can be implied from Victor's speech is obvious. The use of electronic things brings people to disaster. It is about air conditioner. It produces carbon dioxide and ozone. They are the greenhouse gases. If the usage is high, it will slice the ozone layer.</p>

24.	33	A	<p>“It’s okay,” said Jeremy, opening the door, “nobody’s moving.” He stepped out, arched backwards and reached up, lacing his fingers together and groaning. “Ow!” he cried as his back touched the hot car. He turned and looked at the shabby yellow paint--job. Leaning in, he examined an edge where the paint was peeled away: a lattice of tiny filaments wove back and forth underneath, punctuated with tiny black squares. <i>Ahh</i>, thought Jeremy, <i>so that’s how the car’s been recharging itself. The whole surface is a collector.</i> Since escaping the burning forest they hadn’t stopped to refuel nor needed to.</p>	<p>The Greenhouse Effect</p> <p>(The Greenhouse Gases)</p> <p>A certain technology gives more bad impacts rather than the good one.</p>	<p>Character (By action)</p> <p>The touch given by Jeremy to the filaments of car shows the readers that they also produce heat besides carbon dioxide. The last part of the speech shows the readers about burning forests. It is also the evidence that the supply of oxygen decreases. Forest produces oxygen for humans and other living things.</p>
25.	47	A	<p>They walked further to an opening in the earth where a pool of murky water bubbled and steamed. Several of Lupercus’s people hovered around it with instruments, tanks, and hoses. “These pools, we have discovered through a few unfortunate accidents, contain toxic gases. But in them we have also discovered a unique form of life that lives off these gases, and in the process of metabolising them give off—?” Victor and Jeremy shrugged. “<i>Hydrogen.</i>”</p>	<p>The Greenhouse Effect</p> <p>(The Greenhouse Gases)</p> <p>Toxic gases are closely related to the greenhouse gases.</p>	<p>Point of view</p> <p>Omniscient narrator shows the readers about toxic gases. Toxic gases are indeed dangerous for humans’ health. Toxic gases are usually produced through high technology. It is usually used in the form of weapon. The toxic gases are carbon dioxide, ozone, methane, and nuclear.</p>

26.	48	A	<p>“Don’t sit there,” barked Lerrett. His head, like theirs, was bound in swaths of rough woven material and his eyes were shielded by yellow half-spheres.</p> <p>“But I can’t walk anymore,” protested Victor.</p> <p>“That may be, but don’t sit there.”</p> <p>“Why not?”</p> <p>“If you sit on that rock, you will absorb its heat by conduction. The last thing you want is to get hotter. Sit on this,” he said, handing Victor a cooking pot.</p>	<p>The Greenhouse Effect</p> <p>(Blackbody Radiation)</p> <p>People can feel the heat through radiation process.</p>	<p>Character (By speech)</p> <p>It can be the proof for the readers about knowledge derived from the story. It does not merely talk about the way people sit, but it is more likely an explanation. Lerret tells Victor not to sit on the rock. Here, the readers can understand about radiation process. Rock is a good conductor of heat.</p>
27.	48	A	<p>“I’m dying of thirst,” said Jeremy.</p> <p>“No you’re not,” said one of the other Five Fingers. “I’ve seen men die of thirst.”</p> <p>“Okay, I’m just saying that I can’t save my water any longer.”</p> <p>“I didn’t tell you to save your water,” said the Finger. “It’s no good to you if you’re dead.”</p> <p>“Oh, thank you!” said Jeremy, opening his canteen and guzzling.</p> <p>“You must remember when we get back to the camp not to drink too much water. You’ll have been sweating all day, so there won’t be much salt left in your body. If you do drink too much you could go into hyponatremia.”</p>	<p>The Greenhouse Effect</p> <p>(Blackbody Radiation)</p> <p>Body can feel the heat because of radiation. Too much heat can make people dehydrate.</p>	<p>Character (By speech)</p> <p>Lerret, again, gives the readers information about radiation. Through radiation process, heat will rise up to humans’ body. Too much heat will make people dehydrate because of lacking of hydrogen or water. Here, Lerret also tells about hyponatremia, the effect of too much water consumption after getting heat.</p>

28.	49	A	<p>“This is good,” said Jeremy, sitting on the sand with a bowl of the stew they’d made, enjoying the warmth radiating from the ground as the evening air grew cool.</p>	<p>The Greenhouse Effect</p> <p>(Blackbody Radiation)</p> <p>Radiation does not merely come from the Sun directly.</p>	<p>Character (By speech)</p> <p>Jeremy’ speech gives the readers knowledge about the blackbody radiation. The readers will understand that radiation does not merely come from the Sun directly. It can be saved into the ground. That is why, people can feel the heat when they sit on the ground</p>
29.	49	A	<p>An uneasy feeling overcame him, that the faraway stars should be such a constant while the familiar planet at his back threatened to kill him.</p>	<p>The Greenhouse Effect</p> <p>(Blackbody Radiation)</p> <p>Radiation process can also be felt in the night.</p>	<p>Point of view (non-participant)</p> <p>Omniscient narrator shows stars radiation can be felt in the night. People can feel the heat and coldness.</p>

30.	50	A	Lupercus walked them around the new camp, introducing them to people from various families and tribes as they arrived. One group came in a wooden steamboat that had been converted to drive on wheels. A cross between a train and a tractor pulled in a short while later, hauling several wheeled caravan homes. One tent had been erected that looked like a huge, unfolded metal insect, while another was a patchwork of solar circuits. In the middle of these hundreds of portable desert homes, water derricks, and windwalls, the Mondolans erected a kind of circus tent whose shape was outlined with bars of neon light.	<p>The Greenhouse Effect</p> <p>(Blackbody Radiation)</p> <p>Radiation can be felt through a good conductor.</p>	<p>Character (By speech)</p> <p>Lupercus gives the readers knowledge more about radiation. Radiation is not only gained from rock, but gained also from metal. Metal is a good conductor to transfer heat energy. It is told that the society use solar circuits to produce light. It is good alternative energy. However, when it is over usage, the heat will also be produced.</p>
31.	53	A	<p>“What is this I hear about you not eating meat?”</p> <p>“Oh, well, I choose not to.”</p> <p>“I think you are a coward.”</p> <p>“What? Why? Because I don’t want to waste those resources? Because I don’t want to murder other living things when there’s no need to?”</p> <p>“No, because you refuse to take responsibility for your life. As a living thing, you devour, you consume. Life can’t be saved or... <i>deferred</i>.”</p>	<p>The Greenhouse Effect</p> <p>(The Greenhouse Gases)</p> <p>Animals are considered as a producer of carbon dioxide emission.</p>	<p>Character (By speech)</p> <p>Victor does not want to eat meat. He thinks by eating meat he murders other living things. However, people should understand that animals are very productive in producing carbon dioxide especially if it is in the form of meat.</p>

32.	53	A	<p>“But... No...” he said, confused. “We <i>are</i> life. We are nature.”</p> <p>“No, my friend,” said Tydial, “we stand <i>apart</i> from nature. She gives things to us, and we must take them with gratitude. But now we’ve taken too much from her with no gratitude, and we killed her. We have killed the gods’ youngest daughter, and we are now responsible for taking her place. Except we are pathetic gods.” He pointed to a small black insect crawling across the dirt floor. “I’m powerful enough to destroy that bug a thousand times over, but damned if I could make one.”</p>	<p>The Greenhouse Effect</p> <p>(The Greenhouse Gases)</p> <p>Toxic gases can endanger people’s life.</p>	<p>Character (By speech)</p> <p>This part is the follow up of the greenhouse gases. Tydial tells the readers how life is so precious and how people are very greedy in exploring nature. They take everything from the Earth with no gratitude. They do not care about their environment which gives many sources.</p>
33.	68	A	<p>He walked to the back of the boat, where Des was studying the schematics of the boat.</p> <p>“What’s this?” she asked. “It seems to be connected to the gas reserves.”</p> <p>“Yeah. In the bottom of the hull, under the sleeping quarters, is a reservoir full of algae. They produce the gas.”</p>	<p>The Greenhouse Effect</p> <p>(The Greenhouse Gases)</p> <p>Certain living thing in the ocean can produce carbon dioxide through respiration process.</p>	<p>Character (By speech)</p> <p>Jeremy and Des talk about the gas reservoir. In the reservoir, they find algae. Algae is a kind of plant that live in the sea. They can produce gases.</p>

34.	71	A	As the day wore on it grew hotter. He fashioned a hat from a square of blue plastic tarpaulin and tied it around his head with rope, then made a matching poncho to shield his arms and legs from the sun.	<p>The Greenhouse Effect</p> <p>(Blackbody Radiation)</p> <p>There are many media where radiation can happen.</p>	<p>Point of view (non-participant)</p> <p>Omniscient narrator shows how plastic can also become the media of transferring heat's energy.</p>
35.	72	A	<p>“Des, you know the gas reservoir under the deck, how big do you think it would be if we let it out?”</p> <p>“It'd be pretty big, like a—” She stopped and looked at him.</p> <p>Jeremy nodded. “A balloon.”</p>	<p>The Greenhouse Effect</p> <p>(The Greenhouse Gases)</p> <p>Reservoir of movement technology will produce more gases in the form of smoke.</p>	<p>Character (By speech)</p> <p>What can be inferred from the conversation between Despendra and Jeremy tells the readers that movement product of technology usually produces gases. Here, the example is balloon. Balloon can fly in the air through the use of gases.</p>

36.	72	A	Victor served Jeremy and Des cups of noodles while they worked on the kite. The rear hatch was open, and the reservoir, a large silvery cloth bladder, was spread around the deck, filling slowly with lighter-than-air gases.	<p>The Greenhouse Effect</p> <p>(The Greenhouse Gases)</p> <p>Reservoir in the vehicle produces more carbon dioxide.</p>	<p>Point of view (non-participant)</p> <p>Omniscient narrator shows the readers a general description about reservoir which is full of gases.</p>
37.	72	A	In the morning, they were awakened by being tumbled to one side of the bed. They clambered out and onto the deck: the gas reservoir bag hung over them like a too-close, oblong moon, and the boat bumped along the surface of the trash atoll, bouncing when it made contact, then coming down to rest on a tiptoe point of the hull. They were airborne.	<p>The Greenhouse Effect</p> <p>(The Greenhouse Gases)</p> <p>The high usage of gas reservoir becomes an energy supply leads to the negative attitude.</p>	<p>Point of view (non-participant)</p> <p>It can be seen from omniscient narrator's perspective that people really depend on technology. Technology, here, refers to the gas reservoir of vehicle. The modern vehicle will produce more gases which endanger people's life.</p>

38.	74	A	<p>The water's surface was coated with a layer of green life that parted as the boat passed through it then closed over again.</p> <p>"Pantego has one of the most diverse ecosystems on the planet," said Des.</p> <p>"Well, <i>used to</i>," argued Victor. "I organised tours for people to visit the rainforests, but then the Coalition got in here, tried to overthrow the elected government, and things got ugly."</p> <p>"Oh yeah," said Jeremy, "I remember when that was in the news. I never really knew what it was about, just that one of my clients went out of business because of it. He was an importer."</p>	<p>The Greenhouse Effect</p> <p>(The Greenhouse Gases)</p> <p>The greenhouse gases start shifting green areas.</p>	<p>Character (By speech)</p> <p>Victor's argument tells the readers that the green areas' position is shifted by humans behaviour. What is meant by behaviour refers to humans' greed. Humans are very greedy in nature's exploitation, especially forest. As a result, the oxygen supply will decrease, while oxygen supply is produced by trees.</p>
39.	75	A	<p>"A small airship landed in the jungle nearby several days ago, but we haven't been able to find whoever was in it. And three days ago a large freighter docked at an industrial port north of here. Judging from the size of it, the government is about to make a major push to take over our country."</p>	<p>The Greenhouse Effect</p> <p>(The Greenhouse Gases)</p> <p>Some industries obviously produce carbon dioxide and methane.</p>	<p>Point of view (non-participant)</p> <p>The omniscient narrator shows the readers about the evidence of industry domination. The more gases which are released from industry will harm the atmosphere of the Earth.</p>

40.	75	A	<p>“One thing doesn’t make sense. They unloaded a missile, something so big it would surely destroy all of Pantego. But our whole battle has been over resources people, land, agriculture. Destroying it all makes no sense. That’s not how the Coalition fights.”</p>	<p>The Greenhouse Effect</p> <p>(The Greenhouse Gases)</p> <p>War is productive media to release greenhouse gases.</p>	<p>Point of view (participant)</p> <p>Jeremy’s point of view constructs an understanding about how dangerous war is. Weapon used during war, especially rocket or missile releases more carbon dioxide and methane. These gases will make the atmosphere thinner.</p>
41.	76	A	<p>“I don’t want to spend any more time camped outdoors than necessary. It’s not safe at night.”</p> <p>“Why not?” asked Victor. He’d been fine with the plan until this.</p> <p>“Much of the coast has been lost to flooding, and that’s driven the wildlife further inland... including the tigers.”</p> <p>“Tigers,” said Victor.</p> <p>“Of course,” said Des.</p> <p>“And the pythons are breeding like we’ve never seen before. Then there’s the cholera, and the creeping moulds...”</p>	<p>The Greenhouse Effect</p> <p>(The Greenhouse Gases)</p> <p>Through the effects of gases produced during war, other living things will be harmed.</p>	<p>Character (By speech)</p> <p>Des’ opinion towards the effects of greenhouse gases is important. She helps the readers to get more knowledge about the further effects of gases. People do not live alone. They live with other living things, and animals. Therefore, when other living things’ areas are threatened, they will move to the new area. It happens during the war. This case also can endanger humans’ life.</p>

42.	77	A	<p>Victor raised his hand. “Yes?” “Um, <i>tigers</i>.” “Ah, yes. Well, it’s rare for them to prey on humans, but I’ve heard reports of several fatal attacks recently. Their food supply must be stretched thin. I suspect they must have also come across corpses, maybe cholera victims from other settlements, and got a taste for human flesh that way.”</p>	<p>The Greenhouse Effect</p> <p>(The Greenhouse Gases)</p> <p>The effects of greenhouse gases will arise animal instinct.</p>	<p>Character (By speech)</p> <p>Victor believes that the further effects caused by war are true. Victor argues that animals food supply get its limit during humans’ war, so animals start spreading diseases and get into humans’ settlement because of the smell of human flesh.</p>
43.	78	A	<p>“Look out,” said Captain Jefredo, pointing to a nest of small broken shells on the ground. He’d done this a dozen times before. Despite the unnatural expansion of certain species in the area, he insisted that they recognise their equal right to exist. Victor liked this, Des was unsure, and Jeremy kept thinking of snakeskin boots and belts.</p>	<p>The Greenhouse Effect</p> <p>(The Greenhouse Gases)</p> <p>More gases are produced, more bad effects are derived.</p>	<p>Character (By speech)</p> <p>Captain Jefredo’s opinion shows how dangerous the gases are. The gases make snakes put of its skin. In addition, he tells the readers about animals’ right to live. They are also other living things, while humans are ignorant. Humans use snakes’ skin as boots and belts material.</p>

44.	81	A	<p>“Look at these trees,” said Des, tapping his arm. “This is going to be a problem.”</p> <p>“What about them? I thought trees were a good thing.”</p> <p>“They’re <i>stressed</i>. Stressed plants open their stomata—their pores—release carbon dioxide and moisture, then they burn.”</p>	<p>The Greenhouse Effect</p> <p>(The Greenhouse Gases)</p> <p>Carbon dioxide produced by trees is indeed the greenhouse gases.</p>	<p>Character (By speech)</p> <p>Des’ speech gives a clear information about how trees can produce carbon dioxide when they get stress.</p>
45.	86	A	<p>Jeremy thought back to his geography classes; he didn’t remember this area being a desert. Then it dawned on him: when he was in school it <i>wasn’t</i> a desert. He recalled the foreclosures and insurance claims that rolled in as this section of the country dried out and turned into a dustbowl. Eventually it became impossible for farmers, developers, or homeowners to get any kind of financial support to stay here, so they abandoned the place.</p>	<p>The Greenhouse Effect</p> <p>(Heat)</p> <p>Heat will be obviously felt during drought.</p>	<p>Point of view (non-participant)</p> <p>Omniscient narator tells that Jeremy tries to recall his geography class about drought. He knows that during drought more heat are produced. In addition, drought will make crops get bad impacts as well.</p>
46.	86-87	A	<p>They drove past houses blasted by so much sun, wind, and sand they seemed to be made of driftwood. The instincts Jeremy had developed since he started travelling told him they should stop here since there was shelter, but the convoy kept going. Of course, he thought, the Fulo convoy would have lots of fuel on-board. And while he and Victor had been lying low, the officials in the convoy were probably not accustomed to roughing it. A small helicopter buzzed above them, scouting the road ahead.</p>	<p>The Greenhouse Effect</p> <p>(Heat and Wind)</p> <p>Heat and wind are the causes of the greenhouse effects.</p>	<p>Point of view (non-participant)</p> <p>Omniscient narrator tells the readers how past houses blasted by so much sun, wind, and sand. In short, the readers can understand that when this case always happens, it can endangers humans’ life.</p>

47.	87	A	<p>“If we keep going, we’ll head right into the thick of it. All the reports from the people in Iktyault, all the satellite measurements, they all say the permafrost is thawing up there. The ice deep in the oceans is melting, too. These are two of the biggest sources of trapped methane—decomposed prehistoric life and frozen ocean gas. This is <i>not</i> a good place to be going right now. Of course, that might not matter.”</p>	<p>The Greenhouse Effect</p> <p>(The Greenhouse Gases)</p> <p>Ice in the ocean is also the producer of the greenhouse gases.</p>	<p>Character (By speech)</p> <p>Des’ assumption gives the readers knowledge about gas trapped in the ice in the ocean. Des thinks that ice in the ocean is melting. The melt of ice will release methane as the biggest gas trapped in ice. Methane’s release will endanger people.</p>
48.	87	A	<p>“Why?”</p> <p>“Because if all that trapped gas does suddenly erupt into the air at once, this planet is going to become a big, lifeless rock. Not just Iktyault, the <i>whole thing</i>.”</p>	<p>The Greenhouse Effect</p> <p>(The Greenhouse Gases)</p> <p>The release of the greenhouse gases will make Earth in the worst condition.</p>	<p>Character (By speech)</p> <p>Des argues that if all that trapped gas does suddenly erupt, the world will lifeless. It can be seen that how dangerous the effects of methane are.</p>

49.	87	A	<p>“And this rocket thing we’re carrying?”</p> <p>“No idea how that’s supposed to work. Sounds like a typical boy solution to me.”</p> <p>Jeremy considered trying to explain what he’d seen at the presentation about the rocket, but he wasn’t sure he could, and didn’t want to be questioned. He couldn’t defend the logic behind the idea—which wasn’t his in the first place. He sat back and looked across at Kellan. <i>Well, he figured, at least I might have a date for the big show.</i></p>	<p>The Greenhouse Effect</p> <p>(The Greenhouse Gases)</p> <p>Weapon is a good medium to spread the greenhouse gases.</p>	<p>Character (By speech)</p> <p>Jeremy realizes that rocket is dangerous. He considers that it is not a solution of global warming. He reminds the readers about the carbon dioxide and other gases released from the rocket.</p>
50.	87	A	<p>The four descended from the cab and explored the area together, avoiding the official Fulo travellers in favour of speaking with the wasteland campers. They learned that this was the only site with well-water left in the state, now that precipitation no longer reached the mountains and the rivers had turned into dry gulches.</p>	<p>The Greenhouse Effect</p> <p>(Heat)</p> <p>Heat will drain off water.</p>	<p>Point of view (participant)</p> <p>Omniscient narrator shows the worst impact of heat. Heat will drain off the water supply. It will make the rivers and wells turn into dry gulches, while water is a very important substance in humans’ life.</p>
51.	88	A	<p>They wandered into the dark, looking up at the stars. Kellan sat down on the ground and Jeremy joined him; the baked dirt radiated the heat of the day’s sunshine back up to them. Jeremy dared to reach out for Kellan’s hand.</p>	<p>The Greenhouse Effect</p> <p>(Blackbody Radiation)</p> <p>Ground is a good medium of radiation.</p>	<p>Point of view (non-participant)</p> <p>Omniscient narrator tells the readers about the process of radiation felt by people through ground. Sun’s light will transfer heat energy and some energy will be saved inside the ground</p>

52.	93	A	The cultists stormed out and the rest of the meeting went calmly. Afterward, the elderly man introduced Victor and Jeremy to his neighbours, and they took a walk around the block together. The woman leading the meeting pointed out various projects aimed at helping the people be as self-sustaining as possible, from water purification to energy generation to the biggest project of all, turning every available plant-box, park, basement, and rooftop into a garden.	<p>The Greenhouse Effect</p> <p>(The Greenhouse Gases)</p> <p>The release of the greenhouse gases into the air will get worse when there is no preventive action.</p>	<p>Point of view (non-participant)</p> <p>Omniscient narrator tells the readers about the preventive action done by people in order to decrease the effects of the greenhouse gases. They try to purify water and turn plant-box into a garden. These actions will indeed reduce the effects.</p>
53.	94	A	“Well, they will be on their own,” said Hanur, spreading his feet to adopt a serious stance and deliver his speech. “Now, listen carefully if you want to survive and not kill anyone else. This road has been getting weaker and weaker every year, and even though the seasons are changing, it’s far earlier than I’m comfortable with for making this crossing, so it’s vitally important you do exactly what I tell you. Even though you’ll be tempted, you must <i>not</i> speed under any circumstances, or else you’ll damage the road and the truck behind you could fall through. Each truck will enter the road about three minutes apart, and you will have to maintain that distance so the pressure on any one patch of ice is never too great. For the same reason, <i>do not stop</i> until we get to the other side. And don’t put on your seat belt. It will just trap you in your vehicle as it sinks. Any questions?”	<p>The Greenhouse Effect</p> <p>(Heat)</p> <p>Heat will melt ice and turn into liquid.</p>	<p>Character (By speech)</p> <p>Hanur’s speech tells the readers about the ice which covers a road. During winter season the road is covered by snow. In this part of the story, what is meant by road here is actually a lake. Lake during winter is also covered by snow. Trucks which are driven by Jeremy and friends will pass through the ice. Then, when the heat produced by engine of the trucks release, it will melt the ice. Therefore, they have to be very careful to pass.</p>

54.	97	A	<p>“Idiot. It’s a bit late for that. Look!” he said, pointing toward the sky: where the sun should have been was a filled-in checkerboard of grey surrounded by a penumbra of light like an eclipse.</p>	<p>The Greenhouse Effect</p> <p>(Blackbody Radiation)</p> <p>Sun is the main source of blackbody radiation.</p>	<p>Character (By speech)</p> <p>Tarq’s speech is an important point in understanding blackbody radiation. He talks about eclipse. The readers can understand that during eclipse. Sun will be covered by penumbra. The effects of it will be in the form of radiation. People can get heat and even can irritate their skin.</p>
55.	97	A	<p>Des leaned forward. “Maybe Fulo’s accidentally igniting some of the methane traps.”</p> <p>“Look,” said the driver of their truck, pointing ahead at a herd of antlered animals. “They’re heading in the opposite direction to us.”</p> <p>“Probably makes them smarter than us,” said Jeremy.</p> <p>“I saw a flock of birds doing the same thing a few hours ago,” said the driver.</p> <p>“Great,” said Jeremy, nodding. “Super.”</p>	<p>The Greenhouse Effect</p> <p>(The Greenhouse Gases)</p> <p>Methane indeed belongs to the greenhouse gases.</p>	<p>Character (By speech)</p> <p>Des’ speech clearly explains the readers about the danger of methane’s release. She argues that Fulo as a technology developed by government ignites some of methane trapped inside the ice of Iktyault. The danger does not only harm people, but also harm animals as living things.</p>

56.	98	A	<p>There, beyond the Coalition shantytown, was a black pyramid towering against the horizon. On its peak rested a vast disc, white on the bottom, blue--black on the top.</p> <p>“Of course,” said Des. “It’s a collector. They’re not just blocking the sun up there, they’re gathering the energy, too, and they’re going to beam it down here.”</p>	<p>The Greenhouse Effect</p> <p>(The Greenhouse Gases)</p> <p>Modern technology is an undeniably active producer of the greenhouse gases.</p>	<p>Character (By speech)</p> <p>Des is one important character in the story. She is a scientist. She plays an important role to construct the understanding of the readers about the greenhouse gases. She knows that the energy collector developed by government will ignite some trapped gases.</p>
57.	99	A	<p>“Crap,” Jeremy said, pulling his foot from the ground. It slurped, and he shook the moisture off his shoe with a kick. As he did, he spotted a beige--brown mound in the distance. He squinted at it. “Is that a bear?”</p> <p>Henry Chutter followed his son’s gaze. “Yes. Yes it is.” He looked longer and closer. “Or at least it <i>was</i>. It’s dead.”</p> <p>“Those animals and birds we saw on the way here, running away, and this bear...” said Des.</p> <p>“I think it’s because the methane pockets are escaping.”</p>	<p>The Greenhouse Effect</p> <p>(The Greenhouse Gases)</p> <p>Methane indeed is a hazardous matter for all living things.</p>	<p>Character (By speech)</p> <p>Des explains the readers about the escape of methane pockets which make animals run away. They know that methane is dangerous. Therefore, they run away to avoid its effects.</p>

58.	99	A	<p>The Prime Minister orated at length before the crowd, talking about future visions, possibilities, and partnerships in terms he'd rehearsed the entire length of his journey here. He invited <i>Fulo's</i> head of geoengineering to the platform to introduce the solar collector shield project in detail to the people assembled there, and those who watched at home as the proceedings were telecast around the world. The disc at the top of the building, he explained, was capable of capturing a previously unimaginable amount of energy as it was beamed down from the orbital collector. The top third of the pyramid stored the collected energy, and was connected to a grid that would allow them to sell it, at a reasonable price, to other sites around the world. The bottom two-thirds formed a completely self-sustaining habitat, with accommodation, shopping, and even a farm encircled by a forest grove.</p>	<p>The Greenhouse Effect</p> <p>(Blakbody Radiation)</p> <p>Advance technology sometimes bring negative rather than positive impacts.</p>	<p>Point of view (non-participant)</p> <p>Omniscient narrator tells the readers about <i>Fulo's</i> project run by government. <i>Fulo</i> uses solar collector to block the sun. Unfortunately, the government does not realize the danger of the heat radiation produced by <i>Fulo</i>. It will melt the ice in the ocean which leads to the increase of the sea level.</p>
59.	99-100	A	<p>"Don't," said Jeremy, holding out his arms. "Don't go in. I just have a feeling." They stayed where they were, sinking and resteping as necessary as they watched the group enter the building. They waited, not knowing what for, until something glinted in the sky above and simultaneously the disc atop the pyramid creaked and plinked. The orbital platform concentrated its collected energy on the disc, sending it down in a beam of light, unseen except for the heatwaves that bent and waggled</p>	<p>The Greenhouse Effect</p> <p>(Blackbody Radiation)</p> <p>Calculation towards bad effects of advance technology is needed as a preventive action.</p>	<p>Point of view (participant)</p> <p>Jeremy's point of view clearly shows how preventive action is needed. He considers the bad impacts which will be produced by <i>Fulo's</i> project. The radiation of it will affect the health of human. This case reminds how humans should be</p>

			the sight of the building and everything around it.		wise in creating technology.
60.	100	A	<p>“They look like people,” said Luilla, peering at the tiny figures on ropes, climbing up the pyramid like ants on a hill.</p> <p>“Oh crap,” said Jeremy.</p> <p>“We should warn someone,” said Des. But before they could move, one of the dots exploded in a tiny puff of flame.</p>	<p>The Greenhouse Effect</p> <p>(The Greenhouse Gases)</p> <p>Flame or fire can happen because something ignites it.</p>	<p>Character (By speech)</p> <p>Des reminds people to avoid climbing up the pyramid because it is going to explode. The explosion will release methane and other dangerous gases. The gases can kill them and harm other living things.</p>
61.	100	A	Des, Victor, Jeremy, Kellan, Henry, and Luilla ran, long-jumped, and tottered at speed to the hangar. Behind them, the disc rumbled and cracked. It slumped on its mooring and its dark surface exploded outward, sending out a hail of blue-black shards. Jeremy, his family, and his friends huddled inside the hangar as the fragments battered the metal roof. They looked back out through the open door to see the disc tilt, slide down one side of the pyramid, then roll past like a runaway Ferris wheel.	<p>The Greenhouse Effect</p> <p>(The Greenhouse Gases)</p> <p>Explosion is a phenomenon which happens when gases are ignited.</p>	<p>Point of view (non-participant)</p> <p>The omniscient narrator shows the important thing which can be inferred from this part that the explosion of Fulo is indeed dangerous. It can release greenhouse gases and also harm people’s life. The</p>

					preventive action, here, is an escape to hinder the gases.
62.	100	A	<p>“We have to get out of here,” said Des. “The light, the heat, the methane—”</p> <p>“Um, what about this?” said Henry. He stood beside a series of joined-up carts like a kiddie train. It reminded Jeremy of the sets of forgotten railways his father used to build in the basement before he turned to carving forgotten animals.</p>	<p>The Greenhouse Effect</p> <p>(The Greenhouse Gases)</p> <p>Methane, light, and heat are indeed the cause of the greenhouse effects.</p>	<p>Character (By speech)</p> <p>Des warns her friends to avoid and get out of the place because the greenhouse gases will release. Here, it clearly shows the danger of the greenhouse gases.</p>
63.	100	A	<p>“And that,” he said, pointing further back, “is my best friend Victor and his wife Despendra.” They couldn’t hear what he was saying, but got the gist, and waved to Luilla. She waved back, and Jeremy looked back to smile at his friends. Behind them, he saw the pyramid. Its surface was incinerating, evaporating in flames. As its supporting framework superheated, the shape collapsed in on itself. A sudden change of pressure hit Jeremy, and flames shot up around the pyramid as the earth opened up and the</p>	<p>The Greenhouse Effect</p> <p>(The Greenhouse Gases)</p> <p>The greenhouse gases are a good media to burn something.</p>	<p>Character (By speech)</p> <p>Jeremy tells the effect of the Fulo’s explosion. The pyramid where Fulo exists are destroyed. Its surface was incinerating, evaporating in flames and it produces heat and release the greenhouse gases.</p>

			structure tumbled into a gaping hole.		
64.	100	A	Jeremy looked forward. They were headed toward a small outcropping of rock that rose from the tundra, a small stony mountain. He looked back to see a ball of fire shoot from the hole, across the sky, followed moments after by another. Then smoke billowed from the crater, white at first, then black, tumbling upward into the air, redoubling itself with each passing second, like a giant, insubstantial, billowy black tree emerging from the ground.	<p>The Greenhouse Effect</p> <p>(The Greenhouse Gases)</p> <p>Smoke as a product of explosion can release the greenhouse gases.</p>	<p>Point of view (non-participant)</p> <p>Omniscient narrator tells that Jeremy sees the fireball is shot to the air from the crater because of the explosion of <i>Fulo</i>. He also sees smoke as a result of <i>Fulo</i>'s explosion. This smoke indeed can release the greenhouse gases which can make atmosphere get thinner.</p>

65.	101	A	The train bumped and Jeremy spun his head forward again. The outcropping of rock had doors in it, which flew open as the train approached. As they entered, Jeremy looked back one last time and felt intense pain, like both his ears had been boxed hard. The air turned oven-hot and pressure bore down on him, but stopped as the doors, each several feet thick, slammed closed behind them. He gripped the bench as the train rumbled on in the dark, then pitched down, gaining speed and momentum. The air rushing past his head grew damp and cold. He couldn't hear anything except ringing.	<p>The Greenhouse Effect</p> <p>(Heat)</p> <p>Air can be a medium to transfer heat energy.</p>	<p>Point of view (non-participant)</p> <p>Omniscient narrator shows that Jeremy still can feel hot air as an impact of the explosion. Indeed, it is also the further impacts of the release of greenhouse gases.</p>
66.	101	A	There was another door on the far side of the seed archive. They walked through it, through a small sealed chamber, then out a second door, and were hit by the warm, moist air of a greenhouse. Before them was an even larger space whose dimensions they couldn't even fathom. Around its sides was a hive of dwellings connected by balconies. In the very middle was a lake with grassy banks and cultivated farm fields surrounded by a lush, towering forest.	<p>The Greenhouse Effect</p> <p>(The Greenhouse Gases)</p> <p>Warm and moist air are the impacts of the greenhouse gases.</p>	<p>Point of view (non-participant)</p> <p>Omniscient narrator clearly shows the readers about the bad impacts of the explosion. It clearly describes the warm and moist air caused by the greenhouse gases.</p>

67.	102	A	In one of the dwellings, Des found an office full of meteorological and atmospheric equipment. She monitored it closely, but came back down day after day and shook her head. None of them had fully regained their hearing after the last explosion outside, so they'd taken to gesturing, unless someone really felt the need to yell—which, given their isolated condition, sometimes happened.	<p>The Greenhouse Effect</p> <p>(The Greenhouse Gases)</p> <p>More bad impacts happen after the greenhouse gases released.</p>	<p>Character (By action)</p> <p>Des finds out an office full of meteorological and atmospheric equipment to monitor <i>Fulo</i>. In addition, the further bad impact of the explosion is people cannot hear anything.</p>
68.	102	A	Then, one day, Des came back from the office— <i>her</i> office, as it had become—and, after a pause, gave a nod. The group assembled the following morning around the train platform, each of them unsure about leaving the paradise that had sustained them all this while, yet equally aware it was a <i>cave</i> , and none of them wanted to spend the rest of their days in a cave. The train still worked, pulling them up and up through the darkness, finally delivering them out into the light of day—but not the light they'd known. As they dismounted, they looked around at the ruined, sooty landscape and up at the sky. The checkerboard platform was gone—failed, crashed into the atmosphere, drifted away, they didn't know. The sun shone again, but through layers of dust that gave its light a reddish cast. A thin plume of smoke still rose from the volcanic crater where the Coalition pyramid stood.	<p>The Greenhouse Effect</p> <p>(The Greenhouse Gases)</p> <p>The smoke caused by the greenhouse gases will last long.</p>	<p>Point of view (non-participant)</p> <p>Omniscient narrator tells the readers that Des still can see and feel the smoke from the volcanic crater where pyramid exists. It can be concluded that bad impacts of the greenhouse gases will be felt in a long time.</p>

69.	102	A	With a map and supplies from the vault, they set out across the wastes toward the closest shore. The air was warmer, and every living thing had been scorched away from the earth around them. How far this extended, they didn't know, and Des wouldn't venture to guess. One theory she did advance, though, awkwardly, through gestures and mouthed words, was that her original figure of a year no longer held true. The instrumentation in the cave told her that, while the sulphur in the atmosphere from the volcano was dangerously acidic, it was also serving as a screen between the earth and the sun. "I give us fifty years," she said.	<p>The Greenhouse Effect</p> <p>(The Greenhouse Gases)</p> <p>Bad impacts will always follow the greenhouse gases emission.</p>	<p>Point of view (non-participant)</p> <p>Omniscient narrator clearly tells the readers about the worst impact of Fulo's explosion. It is about the greenhouse gases released. This part tells that the sulphur from volcano released in the atmosphere is dangerous acidic. Sulphur contains methane and carbon dioxide which can make atmosphere get thinner.</p>
70.	2	B	Jeremy swam upstream through the crowd, away from the dock. Reporters' faces filled the screens and emergency instructions blared from the loudspeakers. Jeremy put his button back on to silence them and kept moving until he found himself in a clearing, a small park, where carbon-scrubbing "trees" like radiators on poles stood around benches and playground equipment.	<p>The carbon Cycle</p> <p>(Carbon on Earth)</p> <p>Ground contains carbon. It can be produced through photosynthesis process.</p>	<p>Point of view (participant)</p> <p>Jeremy's point of view plays an important role in constructing the framework of thinking. It shows that trees are like radiators which can produce carbon. The carbon will be released through photosynthesis process then it will emit again to the ground.</p>

71.	3	B	<p>He banged the heel of his hand on the steering wheel, sounding the car's horn at the seemingly endless train passing before him. Long cars sped past, each laden with a huge shrink-wrapped bale of compressed rubbish, off to be incinerated in a plasma bioreactor somewhere outside town.</p>	<p>The Carbon Cycle</p> <p>(Fossil fuels and energy)</p> <p>Fossil Fuels can be produced through the process of decaying of rubbish.</p>	<p>Point of view (participant)</p> <p>Jeremy's point of view shows that rubbish as the most usual product of the people is dangerous. It can endanger life through the process of decaying. It will create fossil fuels. When it evaporates, it will form carbon. Carbon will be released to the air and emit to the ground again.</p>
72.	4	B	<p>He placed candles around the room, and was happy with the effect. He'd managed to score these in the black market—things that released carbon needlessly through burning were not allowed. But they gave the room a soft, pleasant glow that contrasted nicely with the downtown lights through the large, arched windows along the wall. In two hours, the city would go completely dark for the night except for essential streetlights.</p>	<p>The Carbon Cycle</p> <p>(Carbon on Earth)</p> <p>Carbon can be easily produced through the process of oxidized. The oxidized process can be from when there is something burnt.</p>	<p>Character (By action)</p> <p>Jeremy is one of the two major characters in the story. He contributes to construct understanding towards phenomena which happen on Earth. For instance, the use of an overwhelming carbon can cause natural disaster. Moreover, it shows how candle can actually contain carbon. The use of carbon on Earth is not allowed because the effects of it can endanger people's life. Carbon on Earth is one gas which contributes to global</p>

					warming.
73.	4	B	<p>Jeremy's home was his pride and joy, the buffer between him and the outside world. Years ago it had been part of the headquarters of some company, but their products had long since been declared unacceptable. The rough brick of the studio space contrasted with the sweeping lamps and angular furniture he'd filled it with. Everything was modern—bioplastic or reclaimed metal.</p>	<p>The Carbon Cycle</p> <p>(Carbon on Earth)</p> <p>Carbon can be produced through many medium. It can be solid and liquid.</p>	<p>Point of view (non-participant)</p> <p>Limited omniscient narrator gives the readers knowledge about some media which produce carbon. They can be solid and liquid. In this part, the readers will directly understand that modern bioplastic is a kind of plastic metal, of course, if it is sedimented. Then, it will release carbon to the air.</p>

74.	7	B	He looked up through the orange smog at the sun. A huge ring of light surrounded the faint disc in the sky—a “sundog”, they’d come to be called. <i>All that carbon on Earth—just stored-up light</i> , he thought. <i>We’ve burned up too much of our light</i> .	<p>The Carbon Cycle</p> <p>(Carbon on Earth)</p> <p>Carbon is the most substantial matter on Earth. It will be produced through many process.</p>	<p>Point of view (participant)</p> <p>Jeremy’s point of view proves the readers that carbon is interconnected matters on Earth. It can be formed through the process of sundog.</p>
75.	7	B	Henry Chutter took his son downstairs to his workshop. On the desk in a clamp was a long piece of wood carved into the shape of a long fish with a jutting, spiny lower jaw. Its surface had been painted green, and Henry was in the process of layering over a translucent silvery second coat in a scaly pattern. Two plastic eyes waited on the bench to be added as a final touch.	<p>The Carbon Cycle</p> <p>(Carbon on Earth)</p> <p>Paint or tint can be the good producer of carbon.</p>	<p>Point of view (non-participant)</p> <p>Limited omniscient narrator gives the readers information that the commonly used materials can endanger them. Paint contains carbon if people breathe in a room which is filled by paint. The readers can imagine how much carbon is sniffed by people.</p>

76.	8	B	<p>“Well, maybe I should go somewhere else!”</p> <p>The grocer smiled. They both knew it was an empty threat: he was obliged to register with a local grocery store in order to receive his carbon rations, and he’d already signed on here.</p>	<p>The Carbon Cycle</p> <p>(The Carbon on Earth)</p> <p>Carbon can be used in many ways although, some people still do not aware of the danger.</p>	<p>Character (By action)</p> <p>Jeremy’s action shows that the use of carbon as the tool of marketing is common in this story. If people use carbon as money, then they can imagine how much carbon is released.</p>
77.	9	B	<p>Jeremy’s eyes flared, picturing himself as the conflagrated pyjama--man. “Come on!” he said, dragging Victor by the arm. He stomped into the other flat then stopped, looking around. The layout was the same as his, but in mirror image. The contents, however, were completely different. Victor had filled the place with old furniture and knickknacks. Jeremy ran his fingers along the bevelled edges of a drinks cabinet, then the embroidered surface of an old couch.</p> <p>“All antiques,” said Victor. “Can’t get any more carbon-neutral than that.”</p>	<p>The Carbon Cycle</p> <p>(Carbon on Earth)</p> <p>The old furniture furnished by paint can release carbon.</p>	<p>Character (By speech)</p> <p>Victor’ speech gives the readers information that old furniture in their house can also endanger their life. It can happen because the age shares a big pollution of carbon. It gives the evaporation of carbon.</p>

78.	9	B	<p>“I’m an ethical travel consultant. When I can, I talk people into exploring the place where they live, but if they’re insistent on going somewhere else, I try to find a way for them to do it that’ll do the least damage, and maybe even help someone.” He dropped his long frame into a puffy fabric couch. “It’s all about what kind of effect your passing through the world is going to have, isn’t it?”</p>	<p>The Carbon Cycle</p> <p>(Carbon on Earth)</p> <p>Factory gives big contribution to the production of carbon.</p>	<p>Character (By speech)</p> <p>What is spoken by Victor is the key point of understanding carbon on Earth. It shows the effect of carbon cycle. Factory or certain company which explores the Earth too much will harm people’s life. For instance, the smoke produced by factory is the good example of carbon production.</p>
79.	9-10	B	<p>Despite his cartoon--cat appearance, Victor assumed a professorial pose. “Misrule honours the shadow side of our lives. Life exists because of death. All the fuel our society was built on—it was the trawled--up remains of things that lived before us. Isn’t it ironic that dead dinosaurs were ultimately the means we used to drive ourselves to extinction? All the things we take from the ground—gold, diamonds, coal, petroleum, radioactive rocks—they all corrupt everything they touch. Misrule is the night of shadows, a time for letting out a little chaos in the hopes that it will help us maintain control over the light world we’ve built on top of a graveyard.”</p>	<p>The Carbon Cycle</p> <p>(Fossil Fuels and Energy)</p> <p>Fossil fuels are usually produced by the mine’s product.</p>	<p>Character (By Speech)</p> <p>Victor’ speech provides a vision for the readers. People usually explore natural resources without thinking about the effects which follow. Of course, the product of mines is the good example to show human’s greed. Mines is formed by fossil fuels. Then if it is explored too much, carbon will also be released too much.</p>

80.	16	B	Jeremy appreciated the boy's entrepreneurial spirit. "Okay," he said. "How much? I don't have any carbs to give you."	<p>The Carbon Cycle</p> <p>(Carbon on Earth)</p> <p>Carbon can be used and produced through many ways.</p>	<p>Point of view (non-participant)</p> <p>Limited omniscient shows the importance of carbon as the part of daily life. It is in the form of market sector.</p>
81.	16	B	<p>The Effort had been reinstated with more restrictions than ever before. Jeremy pushed his way through the crowd on the street. Every other person had their thumb pressed to their ear, talking away, trying to get more information because the news programmes were obviously holding back. Winds were coming in from offshore, strong enough sometimes to break windows, knock people over, and flip objects into the air, turning them into projectiles.</p> <p>Jeremy hadn't worn his pin in days because, like everyone else, he wanted to find out what was going on. He stopped at a newsagent's to buy a newspaper, his first in ages.</p> <p>The opposition party, he read, had received documents that implicated Prime Minister Hardwick in a scandalous carbon crime. But, again proving himself a masterful politician, Hardwick relegated the story to the editorial pages by trumping it: A front--page headline</p>	<p>The Carbon Cycle</p> <p>(Carbon on Earth)</p> <p>The problem of carbon touches many aspects of life.</p>	<p>Point of view (non-participant)</p> <p>Omniscient narrator shows that this part is important. It can be the evidence of the politization over nature. Due to the problem of carbon, it gives the influence for some stakeholders to get public attention.</p>

			read “PM to the Rescue”.		
82.	17	B	<p>“My parents,” he said, as it dawned on him, “I have to get them out of here.” At that moment, nothing else in the world mattered. And in the same instant, he realised he had no idea how to save them. “I don’t have any carbon credits. There’s no way I can afford it.”</p>	<p>The Carbon Cycle</p> <p>(Carbon on Earth)</p> <p>Carbon as the tool of marketing.</p>	<p>Character (By speech)</p> <p>Jeremy’s words shows the importance of carbon as the media to buy or sell something.</p>
83.	20	B	<p>“These,” said Victor, going back to the elevator. He produced a jerry--can and poured several dull metal balls into Jeremy’s hand. Jeremy looked up at him, puzzled. “It’s an alloy—I think the guy said aluminium and gallium. It reacts with water to make hydrogen. And I figured water is something we’re going to have a lot of.”</p>	<p>The Carbon Cycle</p> <p>(Carbon on Earth)</p> <p>Metal is a medium in the contribution of carbon pollution.</p>	<p>Character (By speech)</p> <p>Victor’ speech gives information to the readers that the intensity of metal usage is high. It means that the contamination produced is also high.</p>

84.	20	B	<p>Jeremy nodded, then raised his head. The sky was a deep sea-green and the air smelled of ozone. Nobody was looting the shops around them. They knew something was coming, and more objects would not be a help. Jeremy felt it, too, the urge to find people he cared about and to</p> <p>hide with them, as if that would provide safety. Beneath that lurked the uncomfortable knowledge that everything certain was about to end, and no reassurance or affection could forestall it.</p>	<p>The Carbon Cycle</p> <p>(Carbon on Earth)</p> <p>Ozon is one gas which produces carbon.</p>	<p>Point of view (participant)</p> <p>Jeremy's point of view construct an important idea which says that the air which smells of ozone is obvious although some people know ozone is one of the greenhouse gases. However, the more important thing is that ozone can produce carbon as well. Therefore, ozone will emit carbon again to the ground.</p>
85.	25	B	<p>Jeremy tipped the remaining fuel-pellets overboard, where they bubbled and hissed in the water. Then he screwed the cap back on the can, tested its buoyancy in the water, and said to Victor, "Here, grab onto this." With his other hand he grabbed his suitcase's handle.</p>	<p>The Carbon Cycle</p> <p>(Fossil Fuels and Energy)</p> <p>Fuel is a kind of energy which can produce movement.</p>	<p>Point of view (participant)</p> <p>Jeremy's point of view shows the readers that the use of fossil fuels which can produce kinetic energy is beneficial.</p>

86.	26	B	They passed through the checkpoint, surrounded by a maze of paths and links and wire covered over in places with corrugated plastic. Other soldiers walked up and down the paths, arms at the ready. All around them were people—hundreds, even thousands, Jeremy couldn't tell—sitting around makeshift tables on boxes or the large spools from which the wire had been dispensed, speaking in languages Jeremy had never heard before. The soldier led them past a long queue of ragged people holding canteens and bowls.	<p>The Carbon Cycle</p> <p>(Carbon on Earth)</p> <p>Plastic is the active producer of carbon.</p>	<p>Point of view (non-participant)</p> <p>Omniscient narrator tells the readers that the plastic usage in society is very high. Everybody uses plastic, while the effect itself is hazardous. Therefore, it opens up the mind of people to do the reduction of plastic usage.</p>
87.	31	B	He'd made a study of the various types of cash registers through the years when clients had been robbed. He turned the key to switch on the register, pressed a button, and the drawer slid open, hitting the end of its rails with a <i>ding</i> . "Oh, yes!" he said. Grabbing a bag from under the counter, he started filling it with handfuls of bills and silver coins, as well as carbon credit notes and black coins.	<p>The Carbon Cycle</p> <p>(Carbon on Earth)</p> <p>The amount of carbon usage in the marketing sector is high.</p>	<p>Point of view (non-participant)</p> <p>Omniscient narrator shows the readers again how demanded carbon is. In this case, the marketing sector of carbon is the dominant way to distribute the carbon cycle on Earth.</p>

88.	53	B	<p>“Perhaps a god has returned to take her sister’s place. From what I’ve seen, she is an angry bitch.” He poured more water on the rocks. “Your Hardwick may be a good politician. But he is no god.”</p>	<p>The Carbon Cycle</p> <p>(Carbon on Earth)</p> <p>Carbon can exist in solid matter.</p>	<p>Character (By speech)</p> <p>What is spoken by Tydial is the basic knowledge of understanding the carbon cycle. Carbon can exist in solid matter, including rock.</p>
89.	54	B	<p>“It’s not that,” Jeremy said, “look closer.” They approached some of the animals, who sniffed at the air, but their eyes were smoky and sightless. “They’re all <i>blind</i>. And it gets worse,” he said. Jeremy led him further out of the city, where some rough structures were erected in the sand. One was like a large, spoked metal wheel on its side.</p>	<p>The Carbon Cycle</p> <p>(Carbon on Earth)</p> <p>Carbon can contaminate air and the effect will be various.</p>	<p>Character (By speech)</p> <p>Jeremy’ speech gives the readers important information that air which is contaminated by carbon can endanger living thing. It can be seen through his speech that animals get blind because of the smoke produced by factory.</p>

90.	64	B	<p>Jeremy stepped as quietly as he could away from the wall and immediately changed colour, growing dark like the rest of the room. He hunkered by the couch and assumed its colour. “Ow!” he said, slapping his wrist: he felt a sensation like a sharp bug--bite. Then another on his cheek, and another on his neck. “You’re not supposed to get it on you,” whispered Andhar, frightening him. He was couch coloured, too. “It’ll draw energy out of anything, even the blood in your skin.”</p>	<p>The Carbon Cycle</p> <p>(Carbon on Earth)</p> <p>Certain liquid matter contains a carbon.</p>	<p>Character (By speech)</p> <p>Carbon can be produced by certain liquid matter. It happens in this part of story. Through Andhar’ speech, the readers can understand that paint contains carbon. The side effects are the drawing energy out and the worst is the blood in people’s skin.</p>
91.	68	B	<p>Jeremy secured the wheel and throttle and went back to look. Victor pulled the line in hand over hand, but it soon became apparent that the mass on the end wasn’t a fish. Des and Jeremy made disgusted noises as Victor hauled the whitish thing on--board. “I need the lure back,” he explained as he dropped the dead creature on the deck and picked at it. It had once been a large sea bird, but its insides were exposed, bursting with fishing line and bits of plastic in a dozen colours. Victor worked as quickly as possible then hurled it back overboard.</p>	<p>The Carbon Cycle</p> <p>(Fossil Fuels and Energy)</p> <p>Fossil fuels can be obtained through the process of sedimentation of the dead creature.</p>	<p>Character (By speech)</p> <p>Victor notices that the dead creature is sea birds. They die because of the contamination of plastic. The worst part of this story is there will be more negative impacts following it. It can be diseases and the release of carbon to the air.</p>

92.	69	B	He climbed the ladder to the flat roof of the wheelhouse and lay down there. The hot, sticky plastic surface of the solar panels was uncomfortable, so he took off his shirt, spread it out, then lay back down.	<p>The Carbon Cycle</p> <p>(Carbon on Earth)</p> <p>The high usage of plastic will endanger people's life.</p>	<p>Character (By action)</p> <p>Jeremy's action shows that the high intensity of plastic usage is obvious. Many people cannot avoid using plastic. Here, the effect is not only about the release of carbon, but the effect also produces heat.</p>
93.	69	B	The engine coughed, wailed, then belched out a cloud of blue--white smoke. The boat lurched forward and Jeremy woke up. He shivered, pulled on his shirt, climbed foggily down from the wheelhouse roof, and looked off the back of the boat. The engine was choking on something, but he couldn't see what.	<p>The Carbon Cycle</p> <p>(Carbon on Earth)</p> <p>Carbon can also be produced by smoke.</p>	<p>Point of view (non-participant)</p> <p>Omniscient narrator tells the readers that technology is the part of people's life and people seem unable to live without technology. Here, it refers to the use of engine in daily life. Certain engine which produces smoke tends to produce carbon as well.</p>

94.	69	B	Des stooped down and touched the viscous liquid, rubbing it between her fingers. “It feels... plastic.”	<p>The Carbon Cycle</p> <p>(Carbon on Earth)</p> <p>Plastic is the major cause of carbon production.</p>	<p>Character (By action)</p> <p>Despendra’s action shows the readers that almost all parts of place are touched by plastic. She finds liquid where the plastic exist. It means that the spread of plastic already touch water.</p>
95.	69	B	<p>“Ow!” yelled Victor. Des rubbed her shoulder, and Jeremy ran to the front. He squinted into the morning sun and the pink sky around it. Beneath it, as far as he could see from left to right, was... <i>something</i>. But not land.</p> <p>“Plastic,” said Des, leaning over the railing beside him.</p> <p>“I’ve heard of this,” said Victor, “but I didn’t think it was real.”</p> <p>“What is it?” asked Jeremy.</p> <p>“A vortex where the plastic that’s been dumped into the ocean collects.”</p> <p>“How big is it?”</p> <p>“<i>Big</i>. Big like a province.”</p>	<p>The Carbon Cycle</p> <p>(Carbon on Earth)</p> <p>A massive of plastic produces a massive of carbon.</p>	<p>Character (By speech)</p> <p>From Despendra’s speech, the readers know plastic usage is everywhere. The truth cannot be denied that people always use plastic, while they understand plastic cannot be digested. It needs many years to be annihilated. This can also be inferred that the plastic usage starts to contaminate water as the source of life. Therefore, it really endangers people’s life.</p>

96.	70	B	The sun hovered overhead, but Jeremy picked his way forward in spite of the heat. The plastic atoll grew thicker, which made walking steadier, but confirmed that there was no way the boat could have ploughed through it. He made his way without his instruments: This place was better sign-posted than cities he'd been to, with a large plastic petrol station sign to his far right, a squadron of shopping trolleys fatally tangled together to his left.	<p>The Carbon Cycle</p> <p>(Carbon on Earth)</p> <p>The radiation of sun touches plastic, then it produces heat.</p>	<p>Point of view (non-participant)</p> <p>Omniscient narrator shows the readers that every single part of people's place uses plastic. Therefore, they can imagine how much heat energy is produced and also how much carbon releases to the air.</p>
97.	70-71	B	Some of the plains he crossed were old and nondescript. Sun and salt corroded the plastic, breaking it down as much as possible. Nothing was red, he found. Red seemed to be the first colour to go. Pale turquoise persisted, and yellow nylon rope was a bumper--crop; he could have as much of that as he wanted. Unfortunately, he didn't want any.	<p>The Carbon Cycle</p> <p>(Carbon on Earth)</p> <p>The corrosion can happen because of the radiation.</p>	<p>Point of view (non-participant)</p> <p>Omniscient narrator shows the readers again the danger of plastic when it is touched by the sun. This moment can make the corrosion to the plastic.</p>
98.	71	B	Later in the afternoon, he found a huge tortoise shell. The creature's skeleton was still inside; Jeremy presumed it died here, finding nothing edible around for miles, or because it ate something plastic that looked like whatever tortoises ate. He wished he could take the shell with him. <i>What do I need with an oversized tortoise shell right now? That would be useless. Useless.</i>	<p>The Carbon Cycle</p> <p>(Fossil Fuels and Energy)</p> <p>Fossil or dead creature are the main component of fossil fuels.</p>	<p>Character (By action)</p> <p>Jeremy finds out a huge tortoise shell. He assumes it died there. From this part, the readers can understand that fossil, skeleton, or parts of dead body are the components of fossil fuels. Through</p>

					biological and geological process, fossil fuels are created.
99.	71	B	<p>In life, the tortoise would have been useless to him, too. The thought struck him as sad, because its shell alone was magnificent. Surely the creature had lived a hundred years or even two—long before men had taken its ancestors' oily remains from the ground and turned them into these plastics.</p> <p><i>Useless.</i></p>	<p>The Carbon Cycle</p> <p>(Fossil Fuels and Energy)</p> <p>Fossil fuels are created over million years.</p>	<p>Character (By speech)</p> <p>It can be inferred from Jeremy that the tortoise died because of the contamination of plastic. The tortoise can only be digested through million years of process, then this can be ascertained that the environment where the tortoise died gets contamination.</p>

100.	71	B	The running shoes led him to a shore of undulating purple plastic. He picked his way to the water's edge and splashed the sweat from his face and arms, then slicked some over his legs. As he cupped his hands, he looked closer at one of the purple shapes: it was a charity collection cup that said "Save the Whales".	<p>The Carbon Cycle</p> <p>(Carbon on Earth)</p> <p>Carbon jeopardizes the life of living things.</p>	<p>Character (By action)</p> <p>Jeremy finds the evidence that the existence of whale is vanished due to high intensity of plastic usage which can produce carbon. Then, carbon will be released to the air.</p>
101.	72	B	<p>The shore undulated beneath Jeremy. He opened his eyes. The plastic containers shifted, dispersing, and he had to splash and clamber to get to higher, more solid ground.</p> <p>In the distance he saw a container ship slipping by. He waved his hands and yelled, but it was too far away for anyone onboard to see him. He stomped around the trash-pile, but there was no way to light a signal-fire; everything was too sodden to burn anyway.</p>	<p>The Carbon Cycle</p> <p>(Carbon on Earth)</p> <p>The release of carbon to the air is determined by the amount of plastic consumption.</p>	<p>Point of view (non-participant)</p> <p>Omniscient narrator shows how consumptive humans are. They always use plastic in their life. It can be seen here that there are plastic containers, many trash piles, etc. Those things actively produce carbon.</p>
102.	72	B	Jeremy waved as he continued toward them, dragging what looked like a giant blue bag behind him. When he got close to the ship, he threw yellow nylon ropes to them. They hauled up his loot, then lowered a rope-ladder for him. He jumped from the trash--and into the salty soup, climbed up, and hugged them both in turn.	<p>The Carbon Cycle</p> <p>(Carbon on Earth)</p> <p>When the number of plastic is used too much, it gives the influence for the carbon release.</p>	<p>Point of view (non-participant)</p> <p>It can be inferred from the omniscient narrator that the trash has made a land. It means there is an abundance of trash and the dominant trash is plastic. The readers can imagine how much carbon is</p>

					released to the Earth's atmosphere.
103.	72	B	<p>“Look inside.”</p> <p>She and Victor loosened the rope in the brass grommets and pulled out plastic containers with sealed foil lids.</p>	<p>The Carbon Cycle</p> <p>(Carbon on Earth)</p> <p>Mines product also produces carbon.</p>	<p>Point of view (non-participant)</p> <p>Omniscient narrator shows the readers that there are containers which are full of plastic and they are sealed by foil lids. Therefore, the readers can imagine how much carbon is produced.</p>
104.	73	B	<p>“There’s an opening out to sea in that direction,” said Jeremy, pointing as he joined them. The boat came down with a hard thud and they looked back and forth, worried, but the ground beneath was made of flexible matter and didn’t damage the ship.</p> <p>Like a white beluga being airlifted away, Bathilda’s boat nosed ahead over the rubbish vortex island, toward its native sea.</p>	<p>The Carbon Cycle</p> <p>(Carbon on Earth)</p> <p>Rubbish is also the main producer of carbon.</p>	<p>Character (By speech)</p> <p>From this part of the story it can be concluded that Jeremy sees that rubbish changing into land. The worst is the rubbish becomes a vortex island. It almost covers the native sea.</p>

105.	77	B	<p>Whatever damage had been done to the chemical works in his head by those events, keeping him stuck in depression, it was repaired now. This felt better than the numb nothing that drugs had given him... even though back then everything was safe and now nothing was.</p> <p>He bounced in his new shoes across the factory floor, back to his hammock. He took them off, placed them carefully to one side, crawled into bed, and slept soundly.</p>	<p>The Carbon Cycle</p> <p>(Fossil Fuels and Energy)</p> <p>Chemical energy is the product of fossil fuel.</p>	<p>Character (By speech)</p> <p>It can be inferred that the damage has correlation with chemical works. Indeed, chemical works produce chemical energy. Unfortunately, the readers know it contributes to the process of the carbon cycle.</p>
106.	81	B	<p>“It’s not that we’re not upset. You shouldn’t think that. But we’ll honour him later, when there’s time,” said Tarq. “It’s bad enough that we’ve been digging up the earth to make plastics and metals and oils, but to tamper with the <i>sky</i>... neither Hardwick nor anyone else has the right to do that.”</p>	<p>The Carbon Cycle</p> <p>(Carbon on Earth and Fossil Fuels)</p> <p>The blend between carbon and fossil fuels, indeed, create the carbon cycle.</p>	<p>Character (By speech)</p> <p>Through Tarq’s speech, the readers can get information about how humans do exploit the Earth in along time. They produce metals, oils, and plastic from the Earth. On the other hand, they do not realize that these things start to jeopardize their life and their environment.</p>

107.	83	B	<p>“Carbon trading was supposed to do away with inequality,” said Victor. “It was supposed to act as a leveller, giving poorer nations that use fewer resources a way to profit from the excesses of richer nations. But look at this—it’s tyranny. The Sweatlands didn’t want to play, so the Coalition came in to raid the place.”</p>	<p>The Carbon Cycle</p> <p>(Carbon on Earth)</p> <p>The carbon problem turns into international problem.</p>	<p>Character (By speech)</p> <p>Victor’ speech proves the readers that the carbon problem becomes an international problem. It touches political affairs. It becomes the way for the rich country to overpower the poor country.</p>
108.	89	B	<p>“Oh my God,” said Jeremy. “Are you alright?” called his mother’s voice through the din. “Jeremy?” “Oh God!” The rocket shot into the sky, climbing away toward heaven, as Jeremy collapsed back down to earth.</p>	<p>The Carbon Cycle</p> <p>(Carbon on Earth)</p> <p>Carbon can also be produced through new technology invention.</p>	<p>Point of view (non-participant)</p> <p>Omniscient narrator tells the readers about a rocket, a modern weapon invention. Here, it can be inferred that rocket does not merely produce heat, or carbon dioxide emission. Rocket also releases carbon to the air. Therefore, the worst impact of using rocket is obvious.</p>

109.	98	B	<p>There, beyond the Coalition shantytown, was a black pyramid towering against the horizon. On its peak rested a vast disc, white on the bottom, blue-black on the top.</p> <p>“Of course,” said Des. “It’s a collector. They’re not just blocking the sun up there, they’re gathering the energy, too, and they’re going to beam it down here.”</p>	<p>The Carbon Cycle</p> <p>(Carbon on Earth)</p> <p>Carbon can be gathered through the process of radiation.</p>	<p>Character (By speech)</p> <p>By blocking the Sun and then collecting the energy, this can be inferred that there will be more dangerous impacts. Despendra tells the readers that it can explode in a sequence of time.</p>
110.	100	B	<p>Jeremy looked forward. They were headed toward a small outcropping of rock that rose from the tundra, a small stony mountain. He looked back to see a ball of fire shoot from the hole, across the sky, followed moments after by another. Then smoke billowed from the crater, white at first, then black, tumbling upward into the air, redoubling itself with each passing second, like a giant, insubstantial, billowy black tree emerging from the ground.</p>	<p>The Carbon Cycle</p> <p>(Carbon on Earth)</p> <p>Smoke is an active producer of carbon.</p>	<p>Character (By action)</p> <p>Jeremy’s action shows that there is a ball of fire shot from the hole. It is followed by smoke. It can be inferred that the production of carbon is released through rocket. Moreover, Jeremy sees that the crater produces smoke and many substances. Therefore, it produces carbon actively.</p>

111.	101	B	They walked through the opposite door in the lobby and found themselves in a vast, white cavern, dimly-lit and very cold. The entire space was filled with metal shelves on which sat countless plastic boxes. Rolling ladders were attached to the shelves. On investigation, they found that all the plastic boxes were labelled with scientific names. Jeremy slid one open and found a tall, beige, waxy envelope inside. Untying the red string at its end and untucking its edges, he tipped it toward his hand and something poured out. “Seeds,” he said to himself. He looked around the vaulted room: it was a backup of every variety of plant Fulo could find. The whole time they’d been making The Effort, Fulo had been making contingency plans, too.	<p>The Carbon Cycle</p> <p>(Carbon on Earth)</p> <p>Plastic cannot be separated from people’s daily life.</p>	<p>Point of view (non-participant)</p> <p>Omniscient narrator shows the readers again and also gives an emphasis on the plastic usage. There are countless plastic boxes. All the plastic boxes are labelled with scientific names. This part is contradictory because the scientists already know that plastic is an active producer of carbon. However, scientists do not care about the danger. Therefore, narrator tells the readers the truth about how ignorant humans are.</p>
112.	1	C	An enormous throng amassed at the waterfront. Jeremy figured it must be half the city or more. After all they’d been through, the hardships of rationing, the perpetual rain, the violent storms and disruptive floods, he supposed they had a right to celebrate. No one knew what the hell the planet was up to, but most of the human beings on it were a lot better off than they were before modern life became so damned <i>efficient</i> .	<p>The Forecast</p> <p>(Weather VS Climate)</p> <p>All disasters usually relate to the weather or climate.</p>	<p>Point of view (non-participant)</p> <p>Omniscient narrator shows Jeremy’s awareness towards the extreme phenomena caused by weather. Storms, floods, and perpetual rain make the readers understand that the world is a hazardous place.</p>

113.	1-2	C	Hardwick was the man who promised to deliver the people from decades of struggle, lack, and worry. Where his predecessor, Redpoll, had continued with the tradition of emergency measures, caution, and consultation, Hardwick offered a welcome release with his message of manifest destiny. People had the <i>right</i> to live well, he said. The time for timorous hiding in storm shelters was over. A new age of prosperity had arrived; it was time to throw off the hair shirt, embrace the new day, and <i>party</i> . When he spoke these actual words on the night of his electoral triumph shaking his middle-aged hips as he did it, the nation cringed, but he'd captured the prevailing mood, and his popularity continued to soar.	<p>The Forecast</p> <p>(Weather VS Climate)</p> <p>Storm is one of the signs where extreme weather happens.</p>	<p>Point of view (non-participant)</p> <p>Omniscient narrator shows the readers there is a politization over nature. The government shows a hypocritical attitude. They pretend to be the savior of people during the storm. They want to get attention from the public.</p>
114.	2	C	Jeremy had a personal stake in the voyage, since he'd sold insurance to several of the travellers. The large global firm that provided all his policies had also insured the ship against Acts of God and "Acts of Man"— a new distinction developed since "natural" disasters started overstepping the known bounds of nature on a regular basis thanks to the side-effects of humanity's progress.	<p>The Forecast</p> <p>(Forecasting Climate Change)</p> <p>Global problems about nature start from a simple problem.</p>	<p>Point of view (non-participant)</p> <p>Omniscient narrator shows the danger of politization over nature due to the fact that some policies do not support the preservation of environment. Some stake holders are given permission to exploit nature. Natural disasters, here, refer to the case of climate change. It usually relates to the illegal logging, while many trees provide much oxygen which is</p>

					extremely important for humans' life.
115.	5	C	<p>“In a positive feedback loop,” she continued, “effects compound each other. The change goes from incremental to exponential. Within systems as complicated as weather and climate, we don’t often know in advance how one aspect will affect another. They’re chaotic, and in chaotic fields, sometimes it just takes one little thing to topple it all into a new state.” She looked down at her drink and dipped her finger in. “Some people call the place where all these elements converge a <i>basin of attraction</i>.” Looking up at him, she put her finger in her mouth and kissed the drop of liquor from it.</p>	<p>The Forecast</p> <p>(Weather VS Climate)</p> <p>Extreme weather will arise extreme climate.</p>	<p>Point of view (participant)</p> <p>Despendra’s point of view shows the increase of chaotic disasters as a result of extreme weather and climate. The effects of them go from local issues into international issues. They are complicated. It happens because people are busy with their business.</p>

116.	9	C	<p>“You look adorable,” said Despendra, bending the wings of his butterfly costume into shape. His little body was held in an orange leotard, but he insisted on wearing black running shorts. “Just think: if you flap your wings, you might cause a hurricane on the other side of the world.”</p>	<p>The Forecast</p> <p>(Weather VS Climate)</p> <p>Natural phenomena can happen into people’s mind through illustration.</p>	<p>Character (By speech)</p> <p>Des’ speech shows an analogy of the hurricane process. Hurricane is one product of extreme weather. It illustrates how hurricane can happen.</p>
117.	14	C	<p>“Who’s throwing them?” asked Jeremy, looking around, angry now. As he turned his face toward the wind, something hit it with a splat. “What the—?” A tiny, wet thing tumbled down the front of his suit and he caught it. “A frog? Who the hell throws frogs at a wedding?” Seeds, insects, fish, and other small creatures started raining down on the crowd. As they ran for the tent, Jeremy yelled to Des, “What’s going on?”</p> <p>Panting and wide--eyed, she looked at them. “What is it?” asked Victor, reaching for her hand.</p> <p>“The jetstream—something’s happening to it,” she said.</p> <p>“Jetstream?” asked Jeremy.</p>	<p>The Forecast</p> <p>(Weather VS Climate)</p> <p>There many kinds of natural phenomena. Most of them are dangerous for humans’ life.</p>	<p>Character (By speech)</p> <p>Des’ speech is an important point. She clearly explains the phenomena which happen during the conversation. She tells the readers the danger of extreme weather or climate. She also tells about the phenomenon which can be considered as an illogic phenomenon. She talks to Jeremy and Victory and explains Jetstream phenomenon. Jetstream is one of the nature phenomenon as a result of extreme phenomena.</p>

118.	15	C	<p>“It’s starting,” said Des. “Storm shelters, everyone!” called the groom. “Everyone get back into your table assignments and a storm-captain will take you to your shelter.” <i>Good organisational skills</i>, thought Jeremy as the guests bustled around the room into their various groups. <i>Maybe that’s what she sees in him.</i></p>	<p>The Forecast</p> <p>(Weather VS Climate)</p> <p>Storm, hurricane, and wind are recently disasters which engulf this world.</p>	<p>Character (By speech)</p> <p>Des’ speech becomes the sign that storm is going to attack her region although it can be hindered. The preventive actions are more important.</p>
119.	16	C	<p>The Effort had been reinstated with more restrictions than ever before. Jeremy pushed his way through the crowd on the street. Every other person had their thumb pressed to their ear, talking away, trying to get more information because the news programmes were obviously holding back. Winds were coming in from offshore, strong enough sometimes to break windows, knock people over, and flip objects into the air, turning them into projectiles.</p>	<p>The Forecast</p> <p>(Weather VS Climate)</p> <p>Extreme weather and climate can destroy the environment where people live in.</p>	<p>Point of view (non-participant)</p> <p>Omniscient narrator shows the process of how natural disasters start to engulf people’s environment. It also tells how dangerous they are. They can destroy the place and the human’s life.</p>
120.	16	C	<p>Yes, Hardwick admitted to one of the paper’s journalists, something had gone wrong. The climate had tipped, unforeseen, into a dangerous new state. But <i>he was going to fix it</i>. According to Hardwick, Fulo, the company he ran before entering into politics, had developed a technology that could reverse the trend and fix the planet. “For some time,” said Hardwick in the article, “Fulo has been providing energy to meet many of the country’s needs. But this</p>	<p>The Forecast</p> <p>(Weather VS Climate)</p> <p>Politics can get into nature.</p>	<p>Point of view (non-participant)</p> <p>Omniscient narrator shows the climate is going to berserk and also attack humans’ environment. In addition, from this perspective the readers can understand what is meant by politization over nature. It</p>

			whole while, Fulo has also been conducting research and development into the crucial new science of geoengineering. This project has delivered what may prove to be the most important breakthrough in human history.”		shows how politics can get into nature. Some of the politicians will use these phenomena to get public attention.
121.	18	C	She laughed. “You’re saying this like it’s news.” Jeremy looked perplexed. “Well, it <i>is</i> news. It’s <i>all</i> the news. There are extreme weather forms gathering off the coast, the jetstream has gone crazy, the—”	The Forecast (Forecasting Climate Change) Forecasting can be the media to inform people about nature.	Character (By speech) Jeremy’s speech is the evidence of extreme weather which engulfs his environment.
122.	26	C	“Um,” answered Jeremy, gesturing back where he came from, “the coast is underwater.” “Surely the government has a plan,” answered the soldier. “I think the government is about to do a runner,” said Victor, pointing to the road. A convoy of red vehicles sped past, whipping up the wind.	The Forecast (Forecasting Climate Change) Forecasting can give prediction what will happen then.	Character (By speech) What is meant by forecasting in this part is how certain attitudes can bring disasters. This part also become the evidence of the increase of sea level. Furthermore, government starts to get public

					attention by their hypocritical actions.
123.	27	C	<p>“What do you need bees for? Honey?” asked Jeremy.</p> <p>Crickle laughed. “A lot more than honey. Bees pollinate our domestic crops. As if the weather wasn’t bad enough, we haven’t been able to cultivate any bees, and without them there’s no way to make our crops reproduce.”</p>	<p>The Forecast</p> <p>(Weather VS Climate)</p> <p>The extreme weather and climate can bring disadvantages to many aspects of humans’ life.</p>	<p>Character (By speech)</p> <p>Crickle’s speech shows how the bad effects of weather bring disadvantages of domestic crops. He tells the readers that he must use bees to help his crops for pollination due to bad weather.</p>
124.	27	C	<p>“Exactly,” said Crickle, “so between this, the floods, and the droughts, we’ve had to improvise, come up with ways to uncouple food production from the land.” He crooked a finger at them, and they followed him down another glass hallway to the doorway of another dome. Jeremy and Victor reflexively covered their noses as the stench hit them.</p>	<p>The Forecast</p> <p>(Forecasting Climate Change)</p> <p>This process can make people understand how dangerous the climate change is.</p>	<p>Character (By speech)</p> <p>Crickle tells the readers the dangerous effects of climate change. It can cause floods and droughts. These disasters make people suffer because they cannot live and also they have no food at all.</p>

125.	29	C	<p>“Only a day away from the Coast?” remarked Jeremy. “Hm. Maybe it’s the elevation, or the wind patterns or something.” He sat on the ground, then lay back, watching clouds cross the opening in the trees.</p>	<p>The Forecast</p> <p>(Forecasting Climate Change)</p> <p>Forecasting is the sign to inform people about natural phenomena.</p>	<p>Point of view (non-participant)</p> <p>Ominiscient narrator tells the readers about the importance of forecasting. This part shows the function of forecasting. The forecast, here, shows the wind patterns and clouds.</p>
126.	44	C	<p>“What the hell?” muttered Jeremy. A towering, roiling, rusty brown cloud loomed over the entire length of the horizon ahead.</p> <p>The other vehicles pulled to a halt in front of them. Jeremy stopped, and the captain jumped out to explain what was happening. “Sandstorm,” he said. “We won’t be able to drive in it or get our bearings. We’d better stop here.”</p>	<p>The Forecast</p> <p>(Weather VS Climate)</p> <p>Extreme weather can cause storm in land, air, and sea.</p>	<p>Character (By speech)</p> <p>Jeremy notifies the coming cloud loomed over the horizon. This cloud causes sandstorm. It happens because of the extreme weather as a result of climate change.</p>
127.	52	A	<p>“She has never seen this before. ‘It’s huge,’ she says. She keeps saying a word, but I’m not sure how to translate it. ‘Wheel’ or ‘cyclone’ or something like that. She says your world will turn around in it, but she can’t see what it is because it’s not natural.”</p>	<p>The Forecast</p> <p>(Weather VS Climate)</p> <p>Storm, wind, hurricane, and cyclone will always happen where the climate change happens as well.</p>	<p>Point of view (non-participant)</p> <p>Omniscient narrator tells the people that there is a girl who talks about cyclone. The readers can understand that cyclone is a kind of extreme weather which recently engulfs environment. She also says the</p>

					effects of cyclone which can destroy everything surrounding people.
128.	53	C	<p>“The storms,” said Lupercus, “they’ve blasted it all away.”</p> <p>The city was flooded with sand. It sloped up the sides of every building and drifted across the streets as if it were a tide and would eventually wash the buildings away.</p>	<p>The Forecast</p> <p>(Weather VS Climate)</p>	<p>Character (By speech)</p> <p>Lupercus mentions the storms. This can be the key point about the disaster which attacks Earth in the recent time. Storm, here, refers to the sandstorm.</p>
129.	54	C	<p>On the horizon, another storm was brewing. Jeremy and Victor wrapped their faces and pulled their goggles into place. “What about them?” Victor asked one of the nurses. She shook her head.</p> <p>“You mean, you just leave them here... to the winds?”</p> <p>She lowered her head as she and the others gathered up their equipment.</p> <p>“We can’t do anything,” said Jeremy, “and we don’t want to get caught out in that storm.”</p>	<p>The Forecast</p> <p>(Weather VS Climate)</p> <p>Winds and storms are the examples of climate change product.</p>	<p>Point of view (non-participant)</p> <p>Omniscient narrator shows how people do not care about other living things. It is shown, here, their animal are left behind during the storm. They just drag their animal to shelter. Animals are also living</p>

			Reluctantly, Victor agreed and they ran back toward the city along with the nurses and a collection of cow- and goat-herds dragging their animals to shelter.		things. They have the right to live. Therefore, people should reconsider this case.
130.	86	C	Jeremy thought back to his geography classes; he didn't remember this area being a desert. Then it dawned on him: when he was in school it <i>wasn't</i> a desert. He recalled the foreclosures and insurance claims that rolled in as this section of the country dried out and turned into a dust-bowl. Eventually it became impossible for farmers, developers, or homeowners to get any kind of financial support to stay here, so they abandoned the place.	The Forecast (Forecasting Climate Change) Climate change can cause drought everywhere.	Point of view (non-participant) Omniscient narrator shows the readers about the effects of climate change. It is shown, here, the drought which engulfs everypart of the Earth.
131.	90	C	Des rolled her eyes. "These are the people who brought us VC Day, remember?" Jeremy nodded, conceding her point. "How are you doing up there, Kel?" Kellan gave a thumbs-up over his shoulder. The past two days' drive had been long and dull, except for the two dust-storms that whipped up, forcing them to stop where they were because they couldn't see anything but the inside of a swirling, dead, beige cloud.	The Forecast (Weather VS Climate) The effects of extreme weather and climate is dangerous. It will affect to the health of people.	Point of view (non-participant) It can be inferred from the omniscient narrator about the danger of sandstorms or dust-storm. The readers can imagine how people can suffer because of it. It makes people unable to see anything.

132.	90	C	The dust and desert slowly transitioned into forests and small towns. The towns were somewhat populated, which Jeremy took to be a good sign, but they didn't stop in any of them. They pressed forward, heading to the next major city on the map, Kertica.	<p>The Forecast</p> <p>(Weather VS Climate)</p> <p>Extreme weather and climate will shift the position of people's territory and other living things.</p>	<p>Character (By speech)</p> <p>Jeremy's speech becomes the key point which tells the readers more about the effect of sandstorm. It is told that the dust and desert slowly transitioned into forests and towns.</p>
133.	92	C	<p>"What about the flooding, the weather, the—?"</p> <p>The man gestured for them to follow him.</p> <p>"There's a neighbourhood meeting tonight. If you come, you'll understand."</p>	<p>The Forecast</p> <p>(Weather VS Climate)</p> <p>Flood is also the product of extreme weather.</p>	<p>Character (By speech)</p> <p>Jeremy is aware of the fact of how the flood is the result of extreme weather. If it always happens, it can shift the people's place and flood will engulf many places.</p>

APPENDIX III

PERNYATAAN

Saya yang bertanda tangan dibawah ini:

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Menyatakan dengan sesungguhnya bahwa saya telah melakukan *peer debriefing* sehubungan dengan analisis data mahasiswa bernama Andria Yusuf Arifanto dalam penelitian berjudul *The Depictions of Environmental Issues in MacDonald's Finitude (An Ecocritical Study)*.

Apabila terbukti bahwa pernyataan ini tidak benar, hal ini sepenuhnya menjadi tanggung jawab saya.

Yogyakarta, 14 Juli 2013



Debbie Ratna Sari

PERNYATAAN

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Apabila terbukti bahwa pernyataan ini tidak benar, hal ini sepenuhnya menjadi tanggung jawab saya.

Yogyakarta, 14 Juli 2013



Lala Isna Hasni